ORDER NO. VMD9403M105

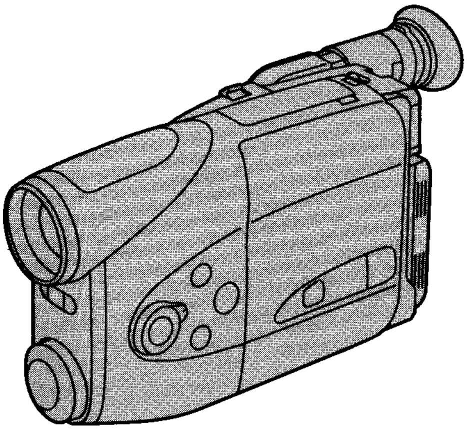
Service Manual

General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic VHS C
PAL
Hi-Fi HQ
VHS-C Movie

NV-R30E / B / A

DL-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: Battery Pack; 4.8 V DC AC Adaptor; 6.0 V DC Consumption; 6.4 W (Battery operation)
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7 mm)
TAPE SPEED	SP mode: 23.39 mm/s LP mode: 11.7 mm/s (NV-R30B/A) Record/Playback Time: SP: 45 min. with NV-EC45XG or NV-EC45SGXP LP: 90 min. with NV-EC45XG or NV-EC45SGXP (NV-R30B/A) FF/REW Time: less than 5 min. with NV-EC45XG or NV-EC45SGXP
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 1 Lux (Low Light Mode)
	LENS: 10:1 Variable Speed Power Zoom Lens with Digital AI Auto Focus, Auto Iris, Auto Focus System, F1.8 (4.6~46 mm), Filter Diameter 37 mm
	IMAGE SENSOR: 1/4 inch CCD Image Sensor
	VIEWFINDER: 0.5 inch Electronic Viewfinder

ITEM	SPECIFICATION
VIDEO	HEADS: 4 rotary heads, 1 flying erase head
	OUTPUT: PHONO CONNECTOR; 1.0 Vp-p 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal-Mono) 4 rotary heads; 2 channels (Hi-Fi Sound-Stereo)
	OUTPUT: PHONO CONNECTOR; −8 dB, 47 kΩ loaded
	INPUT: MIC IN (M3); −70 dB 4.7 kΩ or more unbalanced
WEIGHT	Approx. 710 g (without Battery Pack)
DIMENSIONS	88 (W) × 118 (H) × 242 (D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor 1 pc. Shoulder Strap 1 pc. DC Input Cable 1 pc. Battery for Cassette Adaptor Operation 1 pc. AC Cable 1 pc. 21 Pin Adaptor (NV-R30E/B) 1 pc. AV Output Cable

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

Note : Adjustment procedure supplement for camera unit is separate volume from now.
Please refer to following manual for detail of adjustment procedure of camera.
Order number for adjustment procedure (camera) supplement : VMD9403M106.
(It will be supplied a few weeks later.)

Note : This movie camera uses AC Adaptor is VSK0305 series.
The Service manual for AC Adaptor VSK0305 is separate volume.
Please refer to following manual for detail of VSK0305 series. (order no. VMD9312M137)

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Technical Information

Service caution

1-1. Service Extension Cables

Use the following extension cables when checking or adjusting individual circuit boards

Ref	Part NO	PIN	PART NAME	CONNECTION	Q'TY
1	VFK0727	16	FLAT CABLE	FP6001(MAIN C.B.A.)~MECHA.	1
2	VFK0728	9	FLAT CABLE	FP4001(MAIN C.B.A.)~A/C HEAD	1
3	VFK0729	6	FLAT CABLE	FP6002(MAIN C.B.A.)~MECHA.	1
4	VFK0839	30	EXTENSION	B1001(MAIN C.B.A.)~B1601(EVF CBA)	1
5	VFK0949	23	FLAT CABLE	FP6005(MAIN C.B.A.)~FP2003(DRIVE C.B.A.)	1
6	VFK0913	18	FLAT CABLE	FP701(MAIN C.B.A.)~LENS UNIT	1
7	VFK0929	12	FLAT CABLE	B201(MAIN C.B.A.)~CCD UNIT	1

How To Use extension cables.

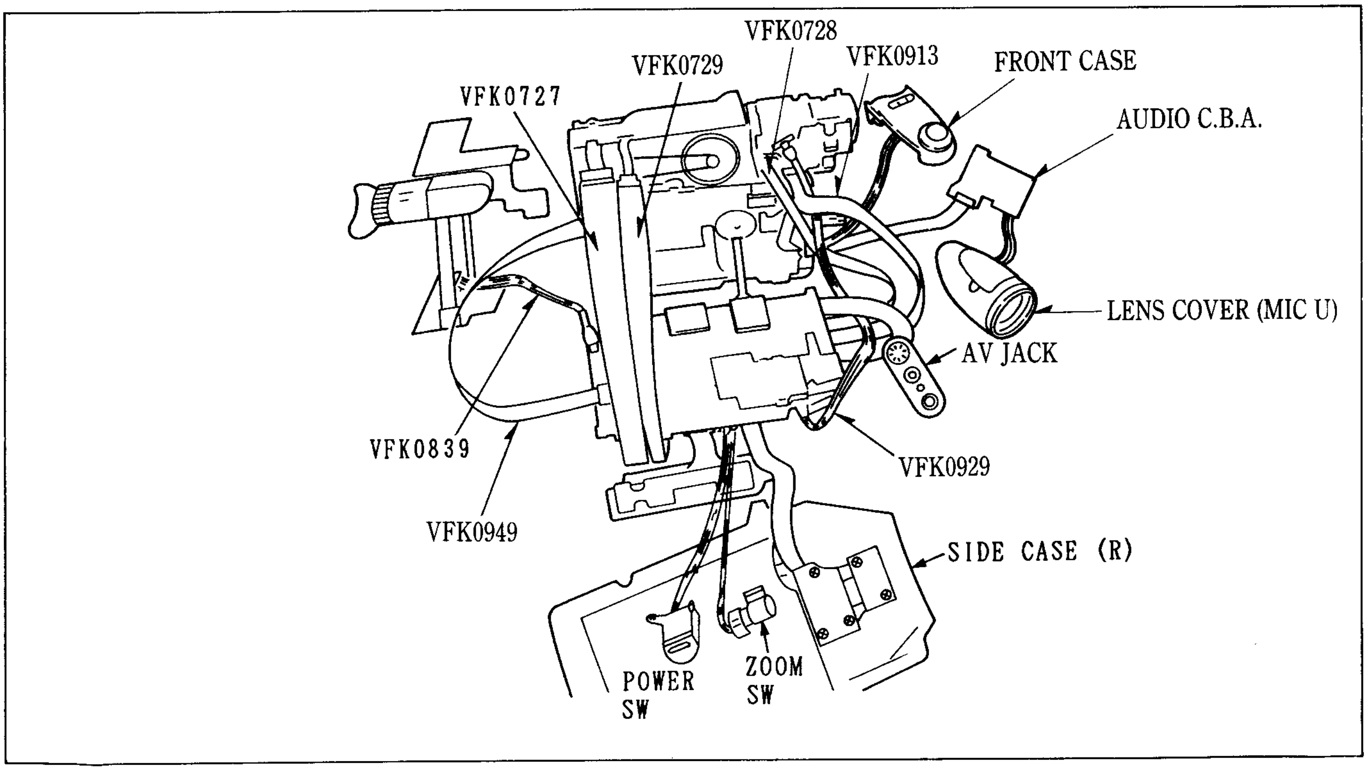

VFK0728
VFK0729
VFK0913
FRONT CASE
VFK0727
AUDIO C.B.A.
LENS COVER (MIC U)
AV JACK
VFK0839
VFK0929
VFK0949
SIDE CASE (R)
POWER SW
ZOOM SW

Fig. T1

NOTE:
For easy servicing, remove the 3 parts from the SIDE CASE (L) as shown below.

1). Zoom SW.......(By removing 1 screw.)
2). Power SW......(By removing 2 screws.)
3). AV JACK.......(By removing 2 screws.)
4). FRONT CASE and Lens cover(By removing 2 Screws)

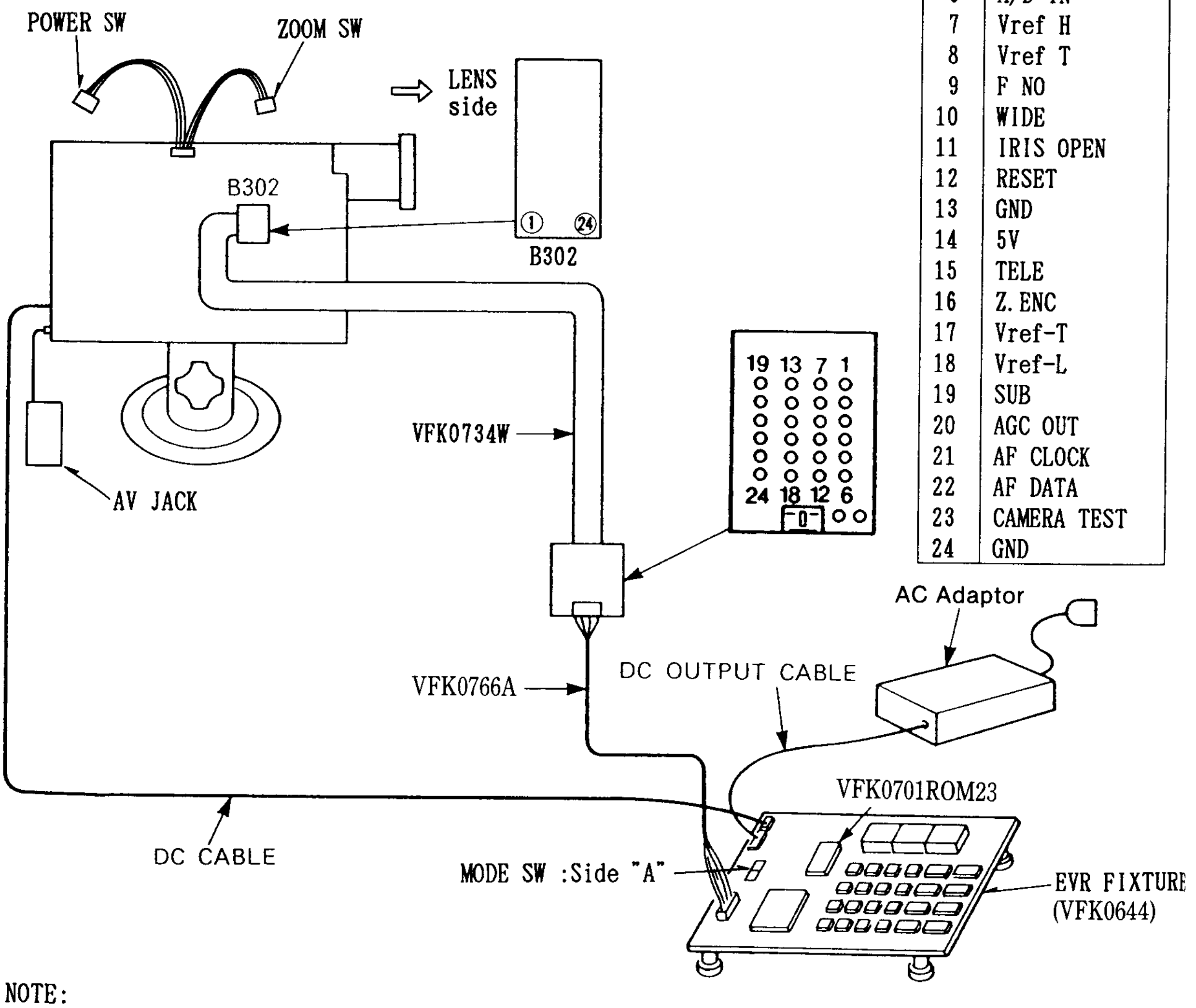
1-2. New ROM IC for EVR fixture.

We are pleased to introduse the new ROM IC, VFK0701ROM23 for the EVR fixture. This ROM IC will provide you with many advanced features such as automatic calculation.

Connecting Cables for between EVR and Movie Camera are as same as provious models.

Number of Connecting Cables : VFK0734W & VFK0766A

Connection between this Movie Camera and EVR fixture are solderless when using the VFK0734W and VFK0766A. Please refer to Fig. T2 for how to use the cables.


POWER SW
ZOOM SW
LENS side
B302
①
㉔
B302
VFK0734W
19 13 7 1
24 18 12 6
0
AV JACK
VFK0766A
DC OUTPUT CABLE
AC Adaptor
VFK0701ROM23
DC CABLE
MODE SW :Side "A"
EVR FIXTURE
(VFK0644)

PIN ARRANGEMENT OF B302

1	CAMERA CLOCK
2	SID
3	VD
4	Y SIGNAL
5	CDS OUT
6	A/D IN
7	Vref H
8	Vref T
9	F NO
10	WIDE
11	IRIS OPEN
12	RESET
13	GND
14	5V
15	TELE
16	Z.ENC
17	Vref-T
18	Vref-L
19	SUB
20	AGC OUT
21	AF CLOCK
22	AF DATA
23	CAMERA TEST
24	GND

NOTE:

*. During servicing, connection of Power SW (which is located on Side Case (L)) must be connected.

*. For easy servicing, remove the 3 parts from the SIDE CASE (L) as shown below.

1). Zoom SW....... (By removing 1 screw.)
2). Power SW...... (By removing 2 screws.)
3). AV JACK....... (By removing 2 screws.)

Fig. T2

ROM ICs for EVR fixture

There are 22 kinds of ROM IC's as shown in Fig. R1.
These all ROM ICs have 3 kinds of Functions as shown below.

(1). General Adjustment for Camera unit
(2). Automatic Calculation for AWB & Colour Reproduction
(3). Average Data Automatic rewriting

REF. No.	ROM NUMBER & availabilty	Effective System	MODE SW SIDE	Applicable models & Function	PART NUMBER OF EVR CONNECTION CABLE
1	VFK0701ROM1 available	PAL & NTSC	"A" SIDE "B" SIDE	NV-MS70/NV-M810 NV-S1/NV-S100 (PAL & NTSC)	VFK0769
2	VFK0701ROM2 available	PAL & NTSC	"B" SIDE	NV-S5/NV-S500 (PAL & NTSC)	VFK0730
3	VFK0701ROM3 available	PAL ONLY	"A" SIDE "B" SIDE	NV-G1/G2/G3(G100/G200/G300) NV-MS95/MS950	VFK0699
4	VFK0701ROM4 available	NTSC ONLY (JAPAN)	"A" SIDE	NV-S7/S9 (NTSC ONLY)	VFK0766A & VFK0734W
5	VFK0701ROM5 available	PAL ONLY	"A" SIDE "B" SIDE	NV-S7/NV-S700 NV-G101/G120/G202/G220/G303	VFK0766A & VFK0734W VFK0699
6	VFK0701ROM6 available	NTSC ONLY (JAPAN)	"A" SIDE	NV-T1(NTSC ONLY)	VFK0766A & VFK0734W
7	VFK0701ROM7 Descontinued-------------(Please use VFK0701ROM10)	PAL ONLY	"A" SIDE	NV-M40/NV-M3000/NV-M3300	VFK0766A & VFK0734W
8	VFK0701ROM8 available	PAL ONLY	"A" SIDE	NV-S6/NV-S600/NV-S8/S800	VFK0766A & VFK0734W
9	VFK0701ROM9 available	NTSC ONLY (JAPAN)	"A" SIDE "B" SIDE	NV-S99/S77	VFK0766A & VFK0734W
10	VFK0701ROM10 available	PAL ONLY	"A" SIDE "B" SIDE	NV-MS4/NV-M9000/NV-M9900 NV-M40/NV-M3000/NV-M3300	VFK0766A & VFK0734W
11	VFK0701ROM11 available	NTSC ONLY (JAPAN)	"A" SIDE "B" SIDE	NV-G200PN NV-M3000PN/NV-M9000PN	VFK0766A & VFK0734W
12	VFK0701ROM12 available	NTSC ONLY (JAPAN)	BITH SIDE ("A", "B")	NV-3CCD1 (NTSC JAPAN DOMESTIC)	VFK0766A & VFK0734W
13	VFK0701ROM13 available	PAL ONLY	"A" SIDE "B" SIDE	NV-S20E NV-S20A/B/NV-S250	VFK0766A & VFK0734W
14	VFK0701ROM14 available	PAL ONLY	"A" SIDE	NV-S78 (PAL ONLY)	VFK0766A & VFK0734W
15	VFK0701ROM15 available	NTSC ONLY (JAPAN)	"A" SIDE	NV-CS1(NTSC ONLY)	VFK0766A & VFK0734W
16	VFK0701ROM16 available	NTSC ONLY (JAPAN)	"A" SIDE "B" SIDE	NV-S750PN NV-S250PN (NTSC ONLY)	VFK0766A & VFK0734W
17	VFK0701ROM17 available	NTSC ONLY (JAPAN)	"A" SIDE "B" SIDE	NV-3CCD1PN NV-CS1	VFK0766A & VFK0734W
18	VFK0701ROM18 available	PAL ONLY	"A" SIDE	NV-CS1(PAL ONLY)	VFK0766A & VFK0734W
19	VFK0701ROM19 available	PAL ONLY	"A" SIDE	NV-R50/NV-R500 (PAL ONLY)	VFK0766A & VFK0734W
20	VFK0701ROM20 available	NTSC ONLY (JAPAN)	"A" SIDE "B" SIDE	NV-R500PN NV-S10/S58	VFK0766A & VFK0734W
21	VFK0701ROM21 Descontinued-------------(Please use VFK0701ROM22)	PAL ONLY	"A" SIDE	NV-S85/S850/S65	VFK0766A & VFK0734W
22	VFK0701ROM22 available	PAL ONLY	"A" SIDE "B" SIDE	NV-R10/R100/A1 NV-S85/S850/S65	VFK0766A & VFK0734W
23	VFK0701ROM23 available	PAL/NTSC SECAM	"A" SIDE "B" SIDE	NV-R10F/R200/R30/R300 NV-R100PN/A1PN	VFK0766A & VFK0734W

Fig. R1

A. G. S. (Anti Ground Shooting)

1. GENERAL DESCRIPTION

1-1. How to Use the POWER SAVE Switch

Tilting the Movie Camera more than 70~80 deg. from its normal horizontal position while the [POWER SAVE] Switch is in the "ON" position activates the following functions:

(1). Anti Ground Shooting (In the Shooting Mode)

The Movie Camera is automatically switched over to the shooting Pause Mode to prevent accidental shooting of the ground when carrying it after shooting a scene.

(2). Auto Power Saving (Inthe Shooting Pause Mode)

This turns off the Viewfinder to prevent unnecessary consumption of power from battery pack.

1-2. To Resume Shooting from the Above Condition

Hold the Movie Camera in roughly horizontal position and press the Start/Stop Button again. When you don't want to use this function, set the [POWER SAVE]Switch to "OFF".

NOTE:

- The Movie Camera is shipped with the [POWER SAVE]Switch set to "OFF".
- When the Movie Camera is restored to the horizontal position after the POWER SAVE Function has automatically stopped the shooting and switched the Movie Camera over to the Shooting Pause Mode the "CHK" Indication in the Viewfinder flashes.
  In this case, some pictures may have been recorded unintentionally before the Movie Camera was switched over to the Shooting Pause Mode (between the horizontal position and more than 90 deg. from the horizontal position).
  To erase that portion, use the Camera Search Function to find end of the last desired scene, and then resume shooting.

2. A.G.S. Function Table

				CONTROL		
		POWER	CONDITION	VTR	EVF	CAMERA
A. G. S. SWITCH	ON	BATTERY	REC MODE	○	×	×
			REC PAUSE	×	○	○
			NO CASSETTE	×	○	○
			OTHERS	×		
		DC JACK	REC MODE	○	×	×
			REC PAUSE	×	○	○
			NO CASSETTE	×	○	○
			OTHERS	×		
	OFF	ALWAYS		×		

NOTE:

1). The "○" mark shows A.G.S. detection.

2). When the AGS function detects, each circuit is controled as shown below.

*. VTR CONDITION·····During the Recording mode, VTR Mode turns to REC Pause.

*. EVF CONDITION·····During the Rec.Pause mode, EVF turns OFF.

*. CAMERA CONDITION··During the Rec.Pause mode, ·Manual Focus and Zoom function Stop.

The Built-in Lithium Battery

1. GENERAL DESCRIPTION

NV-R10/R100 series have a built-in rechargeable lithium battery. It maintains the operation of the built-in clock (Date and Time)when the Movie Camera is turned off. When the Movie Camera is in operation, this battery is recharged automatically. However, if the Movie Camera is not used for a very long time, the lithium battery can become exhausted. In this case, the Indication "⊗" in the Viewfinder flashes and the date and time return to the initial Indication " 1. 1.1990 ".

2. HOW TO RECHARGE THE BUILT-IN LITHIUM BATTERY

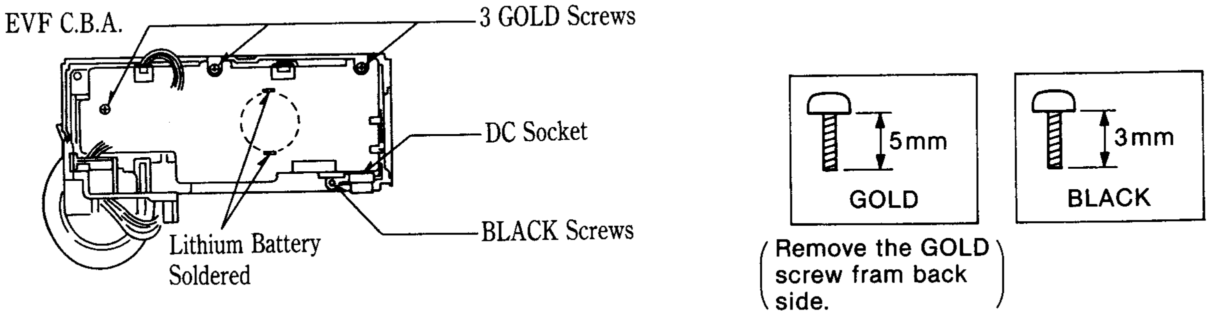
If the Indication "⊗" in the Viewfinder flashes for approx. 10 seconds when turning the Movie Camera on, the lithium battery needs to be recharged as follows:

(1). Connect the Movie Camera to the AC Adaptor.
(2). Turn out the [OPERATE] Switch. (Power on.)
(3). Slide the [EJECT] Switch.
  (Even with no video cassette inserted, the Eject operation must be performed.)
(4). Close the Cassette Compartment by pressing the [LOCK] Button and wait for approx. 4 hours.
  (After the lithium battery has been charged for approx. 4 houres, it can maintain the operation of the clock for approx. 3 months.)

3. HOW TO REPLACE THE LITHIUM BATTERY

(PROCEDURES)

1. Remove the E.V.F. Unit following the dis-assemble procedure(Section 2) "5. Removal of EVF unit" Part (Page 2-3.)
2. Remove 4 gold screws and black screw separate EVF C.B.A. and EVF case.
3. Unsolder the Lithium battery "Z1601" and then replace the new one. (See Fig B1)



(Remove the GOLD screw fram back side.)

Fig. B1

NOTE :

The lithium battery is a critical component(Type No. : VSB0166 Manufactured by Panasonic.)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacturer.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpse.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

SERVICE INFORMATION DISPLAY

General Description

The NV-R30 series has SERVICE INFORMATION DISPLAY function which facilitates quick trouble-shooting. You can turn on the Service Information Display, by performing the following procedures. This causes the Service Information to be displayed on the EVF.(There are 4 kinds of SERVICE MODE, as shown below.)In the OSD Line Output Mode, Service Information can also be viewd on the TV.

MODE NAME	FUNCTION	How to turn it ON. (Push following keys simultaneously for at least 2 sec.)		
OSD Line Output MODE	· Checking the EVF information on the TV monitor.	DATE/TIME SET (TOP PANEL)	RESET (TOP PANEL)	DATE TIME (SIDE PANEL)

MODE NAME	FUNCTION	How to turn it ON. (Push following keys simultaneously for at least 2 sec.)		
SERVICE MODE 1	· Remaining Battery A/D Value · Safety Device · Capstan/Cylinder injuctions	DATE/TIME SHIFT (TOP PANEL)	RESET (TOP PANEL)	DATE TIME (SIDE PANEL)

MODE NAME	FUNCTION	How to turn it ON. (After chosing SERVICE MODE 1 , Push [DATE/TIME] key.(SIDE PANEL)
SERVICE MODE 2	· Reference Voltage A/D Value · Mechanism position · Serial key code.	DATE TIME

MODE NAME	FUNCTION	How to turn it ON. (After chosing SERVICE MODE 2 , Push [DATE/TIME] key.(SIDE PANEL)
SERVICE MODE 3	· ERROR CODE Display	DATE TIME

MODE NAME	FUNCTION	How to turn it ON. (After chosing SERVICE MODE 3 , Push [DATE/TIME] key.(SIDE PANEL)
SERVICE MODE 4	·PG SHIFTER ADJUSTMENT	DATE TIME

ERROR CODE DISPLAY

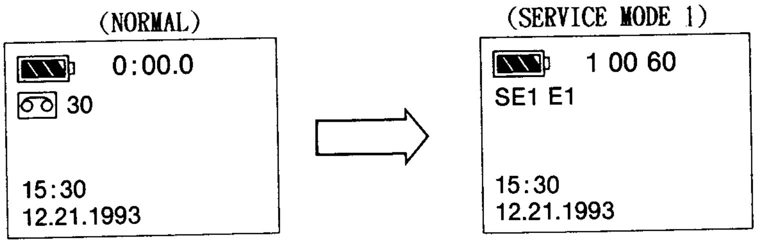
When undesirable conditions occur, the "ERROR CODE" will automatically be displayed on the EVF, the CAMERA LED will flash for a short time, then the power will be turned off.

By turning on Service Mode 3, you can check to see what kind of undesirable condition occured, even after the ERROR CODE has disappeared. You can check the Error Code if the AC Main Lead or the Battery has been disconnected. To clear the ERROR CODE, disconnect the AC Main Lead or the Battery. You can also check Error Code by looking at how the CAMERA LED flashes. The CAMERA LED flashing pattern will differ according to the Error Code.(See Fig.J)

SERVICE MODE 1

① Remaining Battery Voltage (A/D Value)=This Value shows the voltage at IC6001 Pin 98 which detects the battery under cut.

Desplay:
(Example)



For example ⇒SE1 E1 (Means you are in Service Mode 1 and the voltage at IC6001 Pin 98 is 3.35V.)

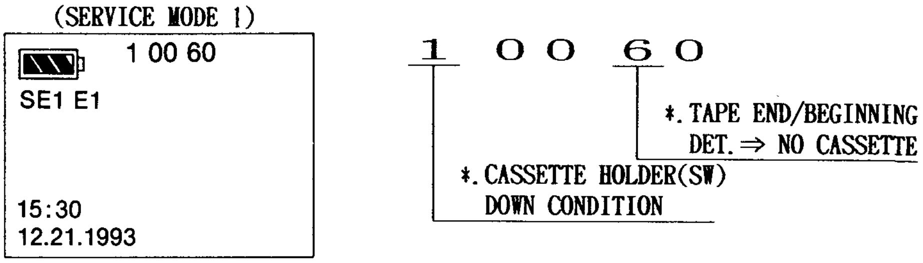
★ When the voltage at IC6001 pin98(the battery remaining voltage) and the voltage (approx. 3.35V) at IC6001 Pin 99(the reference voltage) became same level, battery under cut will be detected.

		Low Digit															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
High Digit	0	0	0.01	0.03	0.04	0.06	0.07	0.09	0.10	0.12	0.13	0.15	0.16	0.18	0.19	0.21	0.22
	1	0.24	0.25	0.27	0.28	0.30	0.31	0.33	0.34	0.36	0.37	0.39	0.40	0.41	0.43	0.45	0.46
	2	0.48	0.49	0.51	0.52	0.54	0.55	0.57	0.58	0.60	0.61	0.63	0.64	0.66	0.67	0.69	0.70
	3	0.72	0.73	0.75	0.76	0.77	0.79	0.80	0.81	0.83	0.85	0.86	0.88	0.89	0.91	0.92	0.94
	4	0.95	0.97	0.98	1.00	1.01	1.03	1.04	1.06	1.07	1.09	1.10	1.12	1.13	1.15	1.16	1.18
	5	1.19	1.21	1.22	1.24	1.25	1.27	1.28	1.30	1.31	1.33	1.34	1.36	1.37	1.39	1.40	1.42
	6	1.43	1.45	1.46	1.48	1.49	1.50	1.52	1.53	1.55	1.56	1.58	1.59	1.61	1.62	1.64	1.65
	7	1.67	1.68	1.70	1.71	1.73	1.74	1.76	1.77	1.79	1.80	1.82	1.83	1.85	1.86	1.87	1.89
	8	1.91	1.92	1.94	1.95	1.97	1.98	2.00	2.01	2.03	2.04	2.06	2.07	2.09	2.10	2.12	2.13
	9	2.15	2.16	2.18	2.19	2.21	2.22	2.24	2.25	2.26	2.28	2.29	2.31	2.32	2.34	2.35	2.37
	A	2.38	2.40	2.41	2.43	2.44	2.46	2.47	2.49	2.50	2.52	2.53	2.55	2.56	2.58	2.60	2.61
	B	2.62	2.64	2.65	2.67	2.69	2.70	2.71	2.73	2.74	2.76	2.77	2.79	2.80	2.82	2.83	2.85
	C	2.86	2.88	2.89	2.91	2.92	2.94	2.95	2.97	2.98	2.99	3.01	3.02	3.04	3.05	3.07	3.08
	D	3.10	3.11	3.13	3.14	3.16	3.17	3.19	3.20	3.22	3.23	3.25	3.26	3.28	3.29	3.31	3.32
	E	3.34	3.35	3.37	3.38	3.40	3.41	3.43	3.44	3.46	3.47	3.49	3.50	3.52	3.53	3.55	3.56
	F	3.58	3.59	3.61	3.62	3.64	3.65	3.67	3.68	3.70	3.71	3.73	3.74	3.75	3.77	3.78	3.80

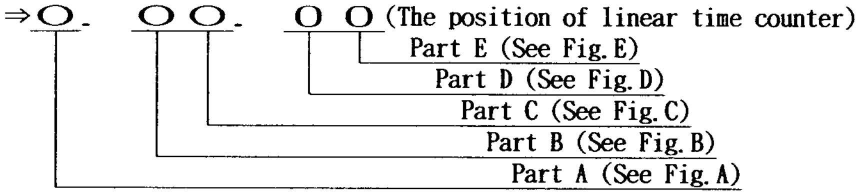
Remaining Battery Voltage (A/D value) (Voltage at IC6001 Pin 98)

② The condition of the tape, sefety device, capstan/cylinder information are shown in hexa decimal numbers.

Desplay :
(Example)


(SERVICE MODE 1)
1 00 60
SE1 E1
15:30
12.21.1993
1 0 0 6 0
*. TAPE END/BEGINNING DET. ⇒ NO CASSETTE
*. CASSETTE HOLDER(SW) DOWN CONDITION

Display position


⇒ 0. 00. 00 (The position of linear time counter)
Part E (See Fig. E)
Part D (See Fig. D)
Part C (See Fig. C)
Part B (See Fig. B)
Part A (See Fig. A)

CONTENTS \ DISPLAY	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CASSETTE SW (CASS. DOWN: 1)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
SAFETY TAB SW (TAB: 1)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
S-VHS OPERATIONSW (ON: 1)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
S-VHS DETECTION SW (S-VHS: 1)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Fig. A

CONTENTS \ DISPLAY	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LOADING LOCK (DET. : 1)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CYLINDER LOCK (DET. : 1)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
T-REEL LOCK (DET. : 1)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
S-REEL LOCK (DET. : 1)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Fig. B

CONTENTS \ DISPLAY	0	4	8	C
NOT USED(ALWAYS "0")	0	0	0	0
NOT USED(ALWAYS "0")	0	0	0	0
BATTERY UNDER CUT(DET: 1)	0	1	0	1
DEW SENSOR (DET: 1)	0	0	1	1

Fig. C

CONTENTS \ DISPLAY	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
UN-LOADING COMMAND (OUTPUT: 1)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
TAPE END DETECTION (DET. : 1)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
TAPE BEGINNING DETECTION(DET. : 1)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
POSITION CHATARING (DET. : 1)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Fig. D

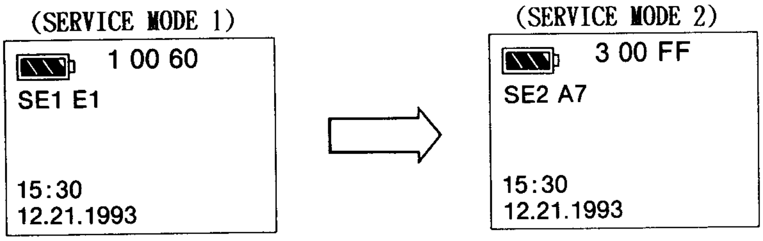
CONTENTS \ DISPLAY	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CYLINDER ON (OUTPUT: 1)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CAPSTAN ON (OUTPUT: 1)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
CAPSTAN REV. (OUTPUT: 1)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
LOADING ON (OUTPUT: 1)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

Fig. E

SERVICE MODE 2

① Reference voltage A/D Value =This value shows the voltage at IC6001 Pin 99 which is used as a reference voltage to detect the battery under cut.

Desplay:
(Example)


(SERVICE MODE 1)
1 00 60
SE1 E1
15:30
12.21.1993

(SERVICE MODE 2)
3 00 FF
SE2 A7
15:30
12.21.1993

For example ⇒SE2 A7 (It shows Service Mode 2 and the voltage at IC6001 pin 99 is 2.49V.)

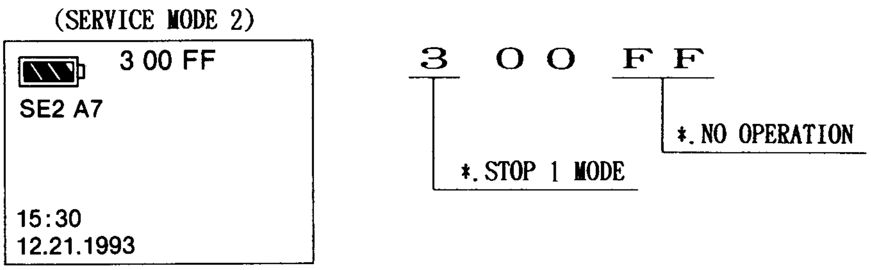
(unit:V)

		Low Digit															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
High Digit	0	0	0.01	0.03	0.04	0.06	0.07	0.09	0.10	0.12	0.13	0.15	0.16	0.18	0.19	0.21	0.22
	1	0.24	0.25	0.27	0.28	0.30	0.31	0.33	0.34	0.36	0.37	0.39	0.40	0.41	0.43	0.45	0.46
	2	0.48	0.49	0.51	0.52	0.54	0.55	0.57	0.58	0.60	0.61	0.63	0.64	0.66	0.67	0.69	0.70
	3	0.72	0.73	0.75	0.76	0.77	0.79	0.80	0.81	0.83	0.85	0.86	0.88	0.89	0.91	0.92	0.94
	4	0.95	0.97	0.98	1.00	1.01	1.03	1.04	1.06	1.07	1.09	1.10	1.12	1.13	1.15	1.16	1.18
	5	1.19	1.21	1.22	1.24	1.25	1.27	1.28	1.30	1.31	1.33	1.34	1.36	1.37	1.39	1.40	1.42
	6	1.43	1.45	1.46	1.48	1.49	1.50	1.52	1.53	1.55	1.56	1.58	1.59	1.61	1.62	1.64	1.65
	7	1.67	1.68	1.70	1.71	1.73	1.74	1.76	1.77	1.79	1.80	1.82	1.83	1.85	1.86	1.87	1.89
	8	1.91	1.92	1.94	1.95	1.97	1.98	2.00	2.01	2.03	2.04	2.06	2.07	2.09	2.10	2.12	2.13
	9	2.15	2.16	2.18	2.19	2.21	2.22	2.24	2.25	2.26	2.28	2.29	2.31	2.32	2.34	2.35	2.37
	A	2.38	2.40	2.41	2.43	2.44	2.46	2.47	2.49	2.50	2.52	2.53	2.55	2.56	2.58	2.60	2.61
	B	2.62	2.64	2.65	2.67	2.69	2.70	2.71	2.73	2.74	2.76	2.77	2.79	2.80	2.82	2.83	2.85
	C	2.86	2.88	2.89	2.91	2.92	2.94	2.95	2.97	2.98	2.99	3.01	3.02	3.04	3.05	3.07	3.08
	D	3.10	3.11	3.13	3.14	3.16	3.17	3.19	3.20	3.22	3.23	3.25	3.26	3.28	3.29	3.31	3.32
	E	3.34	3.35	3.37	3.38	3.40	3.41	3.43	3.44	3.46	3.47	3.49	3.50	3.52	3.53	3.55	3.56
	F	3.58	3.59	3.61	3.62	3.64	3.65	3.67	3.68	3.70	3.71	3.73	3.74	3.75	3.77	3.78	3.80

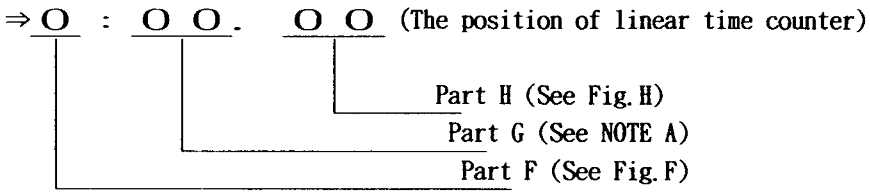
Reference Voltage (A/D value) (Voltage at IC6001 Pin 99)

② The contents of mechanism position, serial key code and mechanical process number are shown in hexa decimal number.

Desplay :
(Example)


(SERVICE MODE 2)
3 00 FF
SE2 A7
15:30
12.21.1993
3 0 0 F F
*.NO OPERATION
*.STOP 1 MODE

Display position


⇒0 : 0 0. 0 0 (The position of linear time counter)
Part H (See Fig. H)
Part G (See NOTE A)
Part F (See Fig. F)

DISPLAY	MECHANISM POSITION
1	EJECT
2	PRE・EJECT
3	STOP 1
4	PRE・STOP
5	(MID)
6	
7	
8	STOP 2
9	――――
A	PLAY

Fig. F (Mechanism Position)

DISPLAY	KEY CODE
0 0	STOP
0 1	EJECT
0 2	REW
0 3	FF
0 6	PAUSE
0 8	REC/REC PAUSE
0 A	PLAY
F F	NO OPERATION

Fig. H (Key code)

NOTE A:

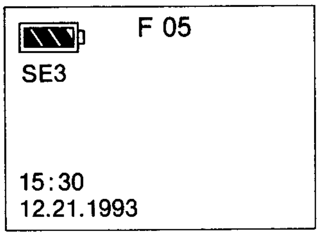
This part shows mechanism movement process.
However it changes too fast to read it.
When servicing, use the Part F (Mechaism Position:See Fig. F)in stead of Part G.

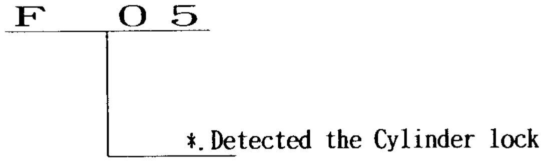
SERVICE MODE 3

① When undesirable conditions occur, the Error Code is stored in IC6001 automatically, using the Lithum battery.
When you turn on Service Mode 3, the Error Code is displayed on the E.V.F.
Also, the CAMERA LED is flashed according to Error code.

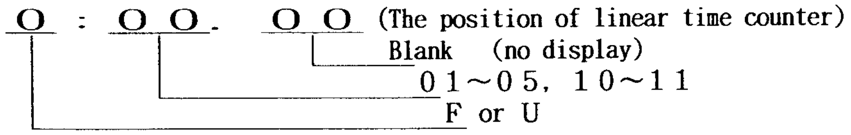
Desplay:
(Example)

(SERVICE MODE 3)


F 05
SE3
15:30
12.21.1993


F 05
*. Detected the Cylinder lock

Display position ⇒
(See Fig. I)


O : OO. OO (The position of linear time counter)
Blank (no display)
01~05, 10~11
F or U

Display position⇒CAMERA LED (See Fig. J)

DISPLAY	CONDITION	The Power off timing
F 0 1	T-REEL LOCK	After 1 minute flashing LED
F 0 2	S-REEL LOCK	After 1 minute indicating LED
F 0 3	UNLOADING LOCK	After 1 minute indicating LED
F 0 4	LOADING LOCK	After 1 minute indicating LED
F 0 5	CYLINDER LOCK	After 1 minute indicating LED
U 1 0	DEW DETECTION	After 18 minute indicating LED
U 2 0	HEAD CLOGGING	Not turning off

Figure I Error Code

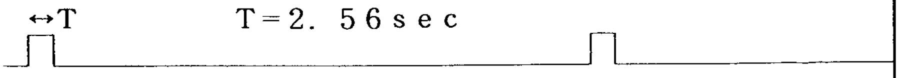
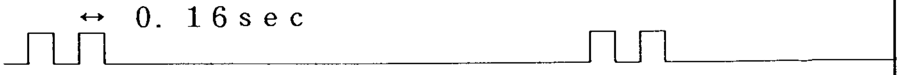
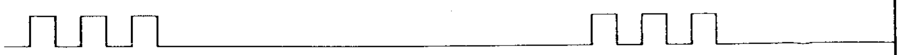
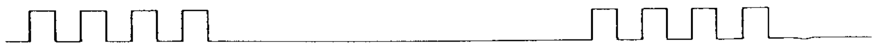
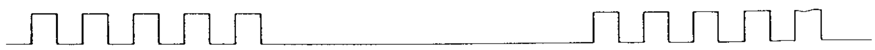
Lock Condition	Power LED Flashing Timming
T-REEL LOCK	
S-REEL LOCK	
UNLOADING LOCK	
LOADING LOCK	
CYLINDER LOCK	
OTHERS	Power LED is flashed at 1 HZ timing

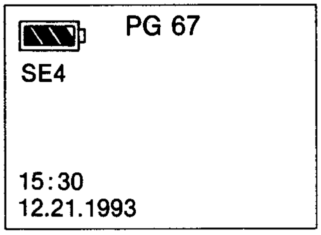
Fig. J LED Flashing Timing

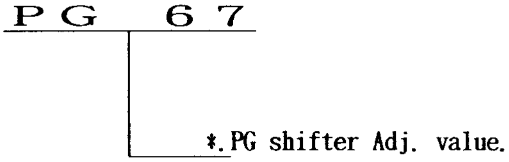
SERVICE MODE 4

① Service Mode 4 is PG SHIFTER ADJUSTMENT mode for Servo section.
For more detail, please refer to Adjustment Service Manual Order No. VMD9403M106.

Desplay :
(Example)

(SERVICE MODE 3)


PG 67
SE4
15:30
12.21.1993


PG 67
*. PG shifter Adj. value.

3. How to Check Digital Circuit

3-1. Checking Principle

The digital circuit can be checked if a ramp signal (sawtooth signal) is supplied to the input of A/D Converter **(IC301-19)** The output of A/D Converter is described below.
In addition to the A/D Converter **(IC301)** output, all digital ICs input and output signals become specified pulses, which are listed in schematic diagram.

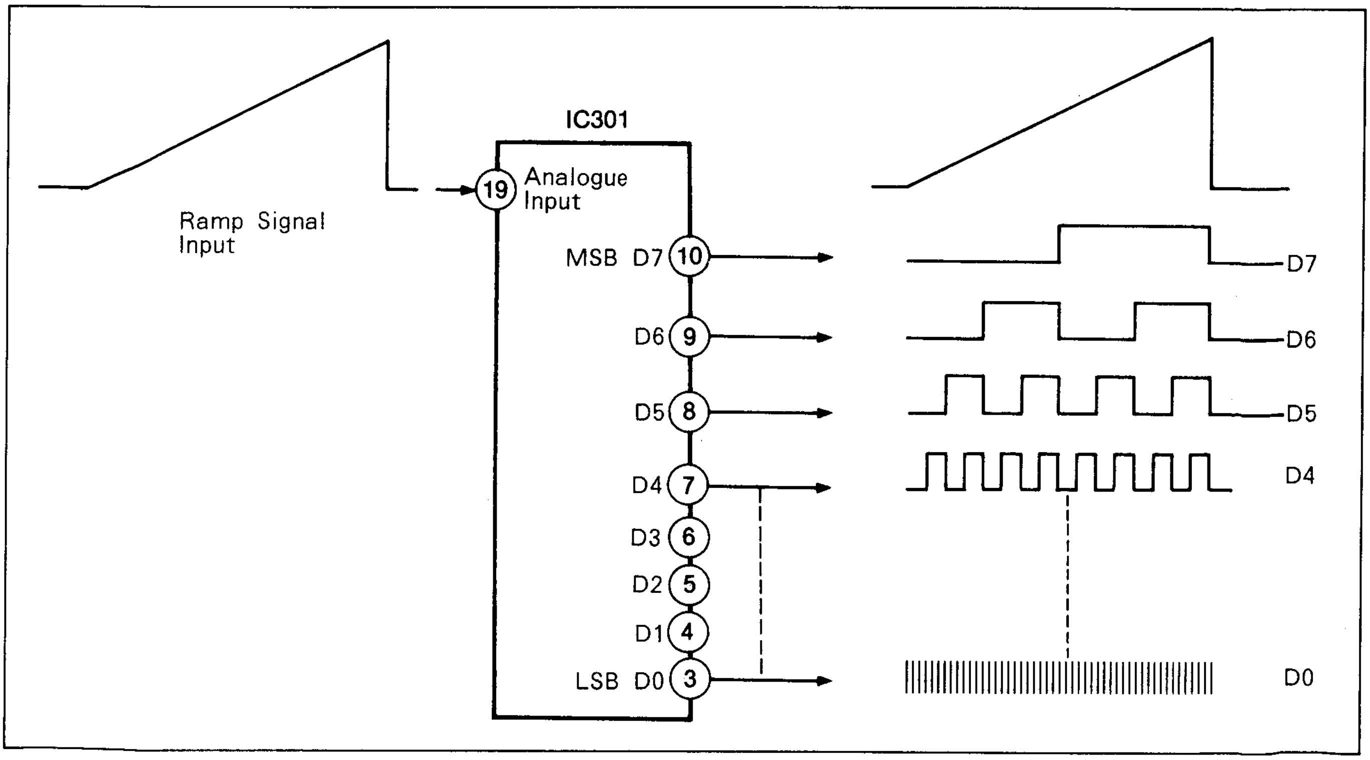
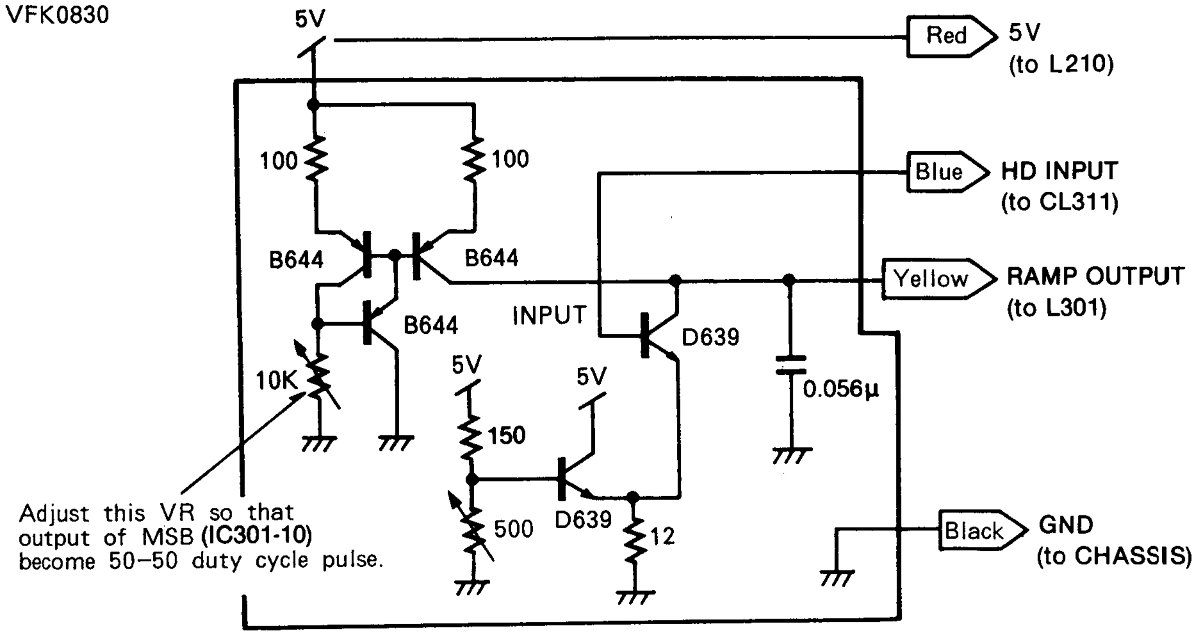

Ramp Signal Input
IC301
19
Analogue Input
MSB D7 10
D6 9
D5 8
D4 7
D3 6
D2 5
D1 4
LSB D0 3
D7
D6
D5
D4
D0

Fig. L1

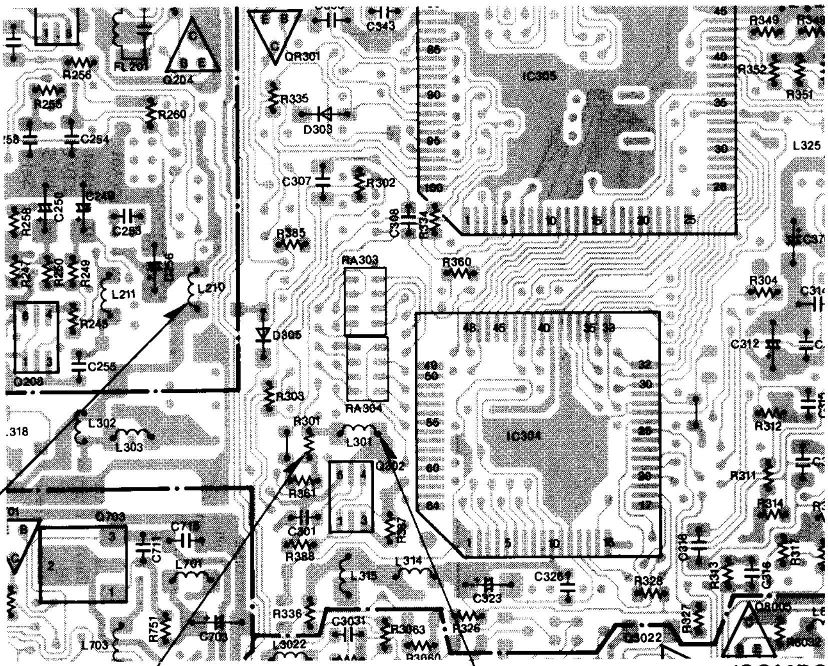
3–2. How to Connect ramp generator.

In order to generate a ramp signal that synchronizes with the HD(horizontal drive) of the camera, the following ramp generator circuit has been designed.
Construct and connect it to process board as shown in **Fig. L2, L3.**


VFK0830
5V
Red
5V
(to L210)
100
100
Blue
HD INPUT
(to CL311)
B644
B644
Yellow
RAMP OUTPUT
(to L301)
B644
INPUT
D639
10K
5V
5V
0.056μ
150
Adjust this VR so that output of MSB (IC301-10) become 50–50 duty cycle pulse.
500
D639
12
Black
GND
(to CHASSIS)

ITEMS	VALUE	PCS
RESISTOR		
ERDS2TJ120	**12ohm**	**1**
ERDS2TJ101	**100ohm**	2
ERDS2TJ151	**150ohm**	**1**
VARIABLE RESISTOR		
EVNDRAA00B14	10Kohm	1
EVNDRAA00B52	500ohm	1
TRANSISTOR		
2SB644	**PNP**	**3**
2SD639	**NPN**	**2**
CAPACITOR		
ECQB1H563JH	**0.056μ**	**1**

Fig. L2

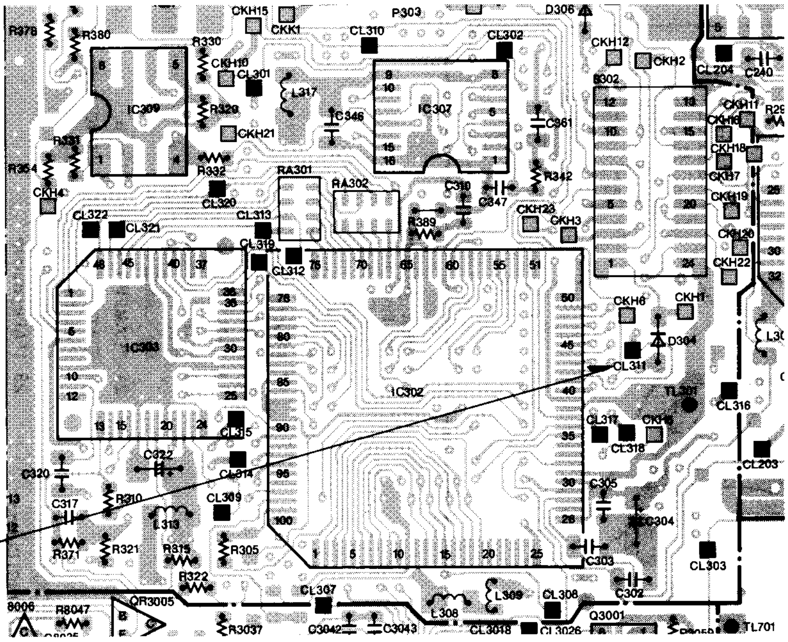


L210
5V
(RED)

(COMPONENT SIDE)

Remov the
R301

L301
Connect the output
of Ramp-Generator (Yellow)



CL311
HD
(BLUE)

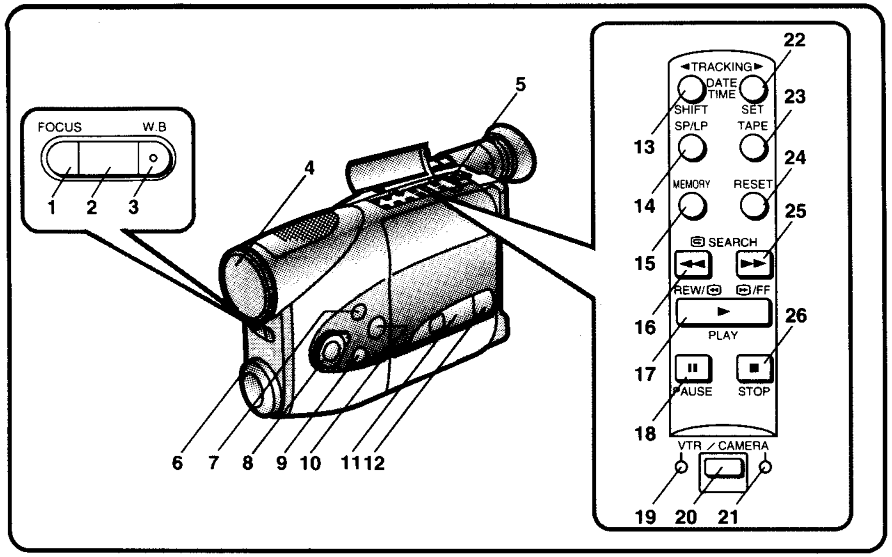
(FOIL SIDE)

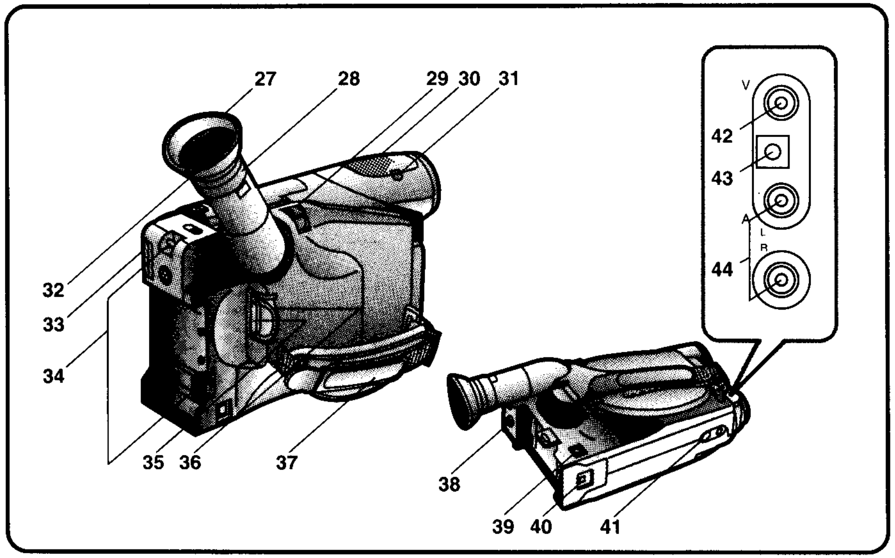
Fig. L3

SECTION 1 GENERAL DESCRIPTIONS

Controls and Functions

For more details, see the pages indicated in brackets.





1 **[FOCUS] Button**

2 **Infra-Red Sensor**

3 **[W.B] Button**
Manual White Balance Button

4 **Lens Cap**

5 **[EJECT] Lever**

6 **Focus Ring**

7 **[BACKLIGHT] Button**

8 **[AE] Dial**
Use this dial to select the desired AE mode.

9 **[DATE/TIME] Button**

10 **[FADE] Button**

11 **Cassette Compartment**

12 **Cassette Compartment [LOCK] Button**

13 **[DATE/TIME/SHIFT • TRACKING] Button**
Press this button to adjust the tracking, or to advance to the next item during the setting of the date and time.

14 **[SP/LP] Button**

15 **[MEMORY] Button**

16 **[REW/⏪] Button**
Use this Button:
- Rec Check
- Review
- REW (Rewind)
- Camera Search

17 **[PLAY] Button**

18 **[PAUSE] Button**

19 **"VTR" Indication Lamp**

20 **[VTR/CAMERA] Button**
Press this Button to select the "VTR" Mode or the "CAMERA" Mode.

21 **"CAMERA" Indication Lamp**

22 **[DATE/TIME/SET • TRACKING] Button**
Press this Button to adjust the tracking, or to set the correct date and time.

23 **[TAPE] Button**

24 **[RESET] Button**

25 **[⏩/FF] Button**
Use this Button:
- Cue
- FF (Fast-Forwarding)
- Camera Search

26 **[STOP] Button**

27 **Eyecup**

28 **Eyepiece Corrector Ring**

29 **[W • T] Zoom Lever**

30 **Microphone**

31 **[MIC] Socket**
To record sound with an external microphone (optional), connect it to the [MIC] Socket. (Connecting an external microphone automatically disconnects the built-in microphone.) Ensure that the microphone conforms with the following requirements:
- Connection Cable: M3-type plug
- Impedance: less than 4.7 kohm
- Type: Stereo-type
  (If a mono-type microphone is connected, no sound will be recorded on the right channel).
- Sensitivity: Approx. −70 dB
- Power Source: Type that does not require a power source

32 **Viewfinder**

33 **[BATT. EJECT] Button**

34 **Shoulder Strap Holders**

35 **Record Start/Stop Button (Red)**

36 **Power ON/OFF Switch [OPERATE]**

37 **Grip Belt**

38 **[EDIT] Socket**

39 **[DC IN] Socket**

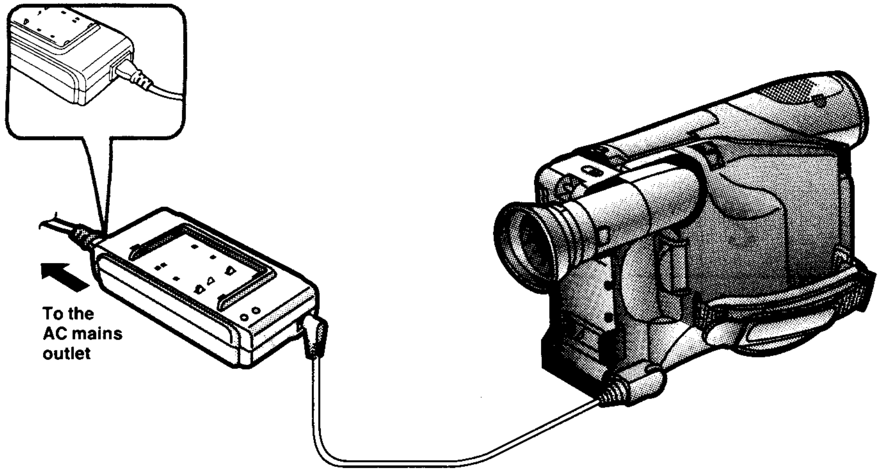
40 **[POWER SAVE] Switch**
When this Switch is set to "ON", the Power Save Function will be activated.

41 **Tripod Receptacle**
Attach a Tripod (optional) to this Receptacle.

42 **[VIDEO OUT] Socket**

43 **[RF DC OUT] Socket**
To playback via a TV Set without AV Input Socket, connect this Socket to the RF IN Socket of the TV Set using an RF Adaptor (optional).

44 **[AUDIO OUT] Sockets**


To the
AC mains
outlet

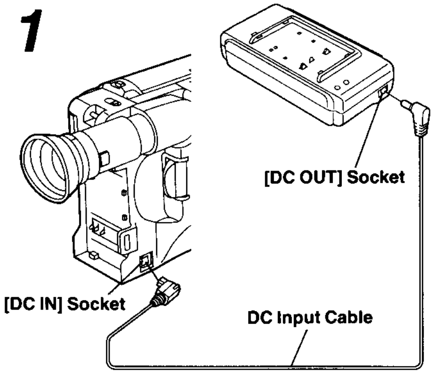
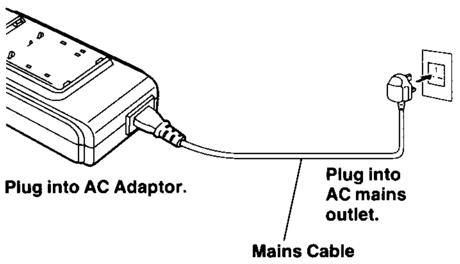
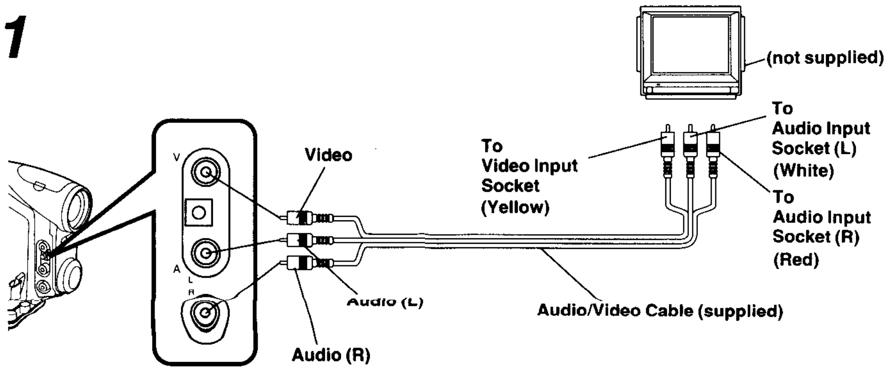
Cautions for the AC Adaptor

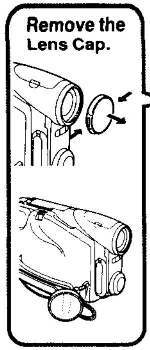
■ Cautions for Use

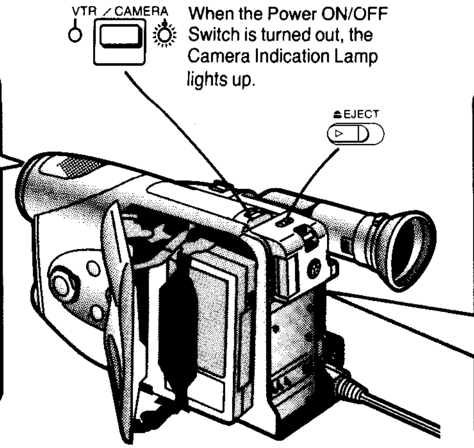
- Before connecting the AC Adaptor to an AC mains socket confirm that the voltage and frequency on the rating plate match the local AC mains voltage and frequency. (The AC Adaptor can be used within a voltage range of AC 100 V–240 V, and a frequency of 50 or 60 Hz.)
- Do not handle the AC Adaptor with wet hands.

■ Caution for Cleaning

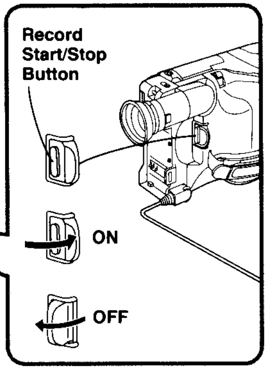
Before cleaning the AC Adaptor, make sure that it is disconnected from the AC mains socket.

Title	*Procedure*		*Remarks, etc.*
Using the AC Adaptor as Power Supply Unit To use the Movie Camera with the Battery Pack, it is necessary to charge the Battery Pack first.	**1**  [DC OUT] Socket [DC IN] Socket DC Input Cable	**2**  Plug into AC Adaptor. Plug into AC mains outlet. Mains Cable	• When the AC Adaptor is used to supply the Movie Camera with power, remove the Battery Pack from the AC Adaptor as it cannot charge the Battery Pack and provide power simultaneously. • Do not use the AC Adaptor for any purposes other than supplying the unit with power or charging the Battery Pack. • When listening to a radio while the AC Adaptor is in operation, the radio reception may be distorted. In this case, move the radio farther away from the AC Adaptor. • When not using the AC Adaptor, unplug its mains cable. When unplugging the mains cable, pull it by the plug, not by the cable.
Watching Picture on a TV set (Using the Audio/Video Cable) Connect after turning off the Movie Camera and the TV Set.	**1**  (not supplied) V A L R Video To Video Input Socket (Yellow) To Audio Input Socket (L) (White) To Audio Input Socket (R) (Red) Audio (L) Audio/Video Cable (supplied) Audio (R) **Connect the Movie Camera to the TV set.**		• If your TV set is not equipped with an AV Input Socket, the RF Adaptor (optional) is necessary. For its connection, read the operating instructions of the RF Adaptor (VW-RF7E). • When connecting the Movie Camera to a TV set with a 21 pin Scart Terminal.



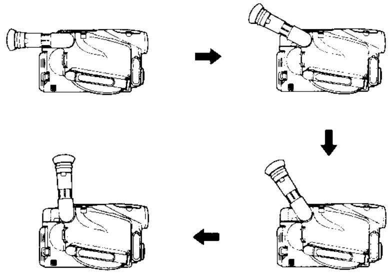


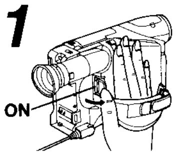
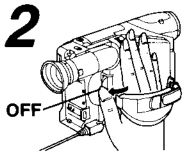
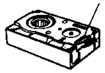
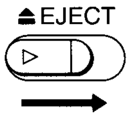
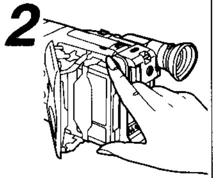
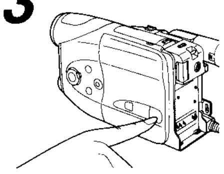
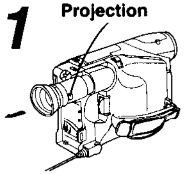
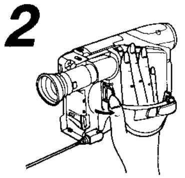
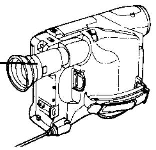
When the Power ON/OFF Switch is turned out, the Camera Indication Lamp lights up.

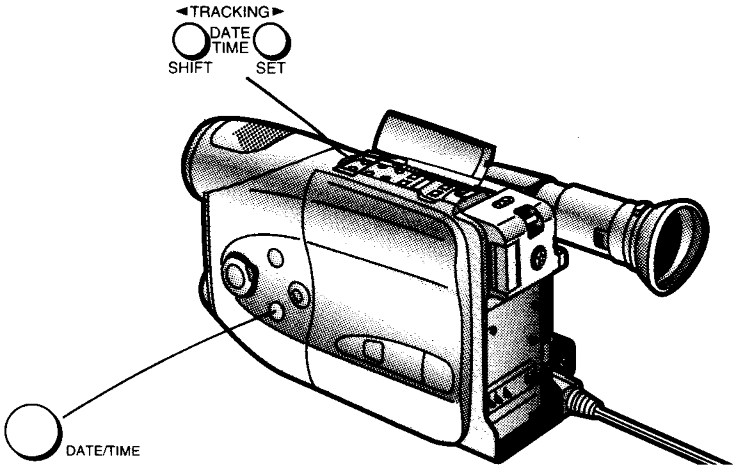


Adjusting the Angle of the Viewfinder

The tilting range if the Viewfinder is 90° (4 potions are marked by click stops).



Title	Procedure				Remarks, etc.
To Power Movie Camera ON/OFF	1  **Turn Power ON/OFF Switch out.**	2  **Turn Power ON/OFF Switch in.**			•When turning on the Movie Camera while a video cassette is already inside, it will automatically be put in the Filming Pause Mode.
Inserting the Video Cassette Before inserting the video cassette, make sure that the tape is tight. If it is loose, turn the cog wheel in the direction of the arrow to tighten it. 	1  **Slide the [EJECT] Lever.**	2  **Insert the video cassette.**	3  **Push the [LOCK] Button.**		**■ Ejecting the Video Cassette** Slide the [EJECT] Lever and pull out the Video Cassette. Close the Cassette Compartment Cover by pressing the [LOCK] Button. •It is not possible to take out the video cassette during filming. •Do not repeatedly insert and take out the video cassette. This could cause the tape to become loose and damaged.
Adjusting the Viewfinder Grasp Projections on either side of the Viewfinder (see Fig. **1**) and extend to fully locked position.	1  **Extend to fully locked position.**	2  **Turn Power ON/OFF switch out**	3  **While looking into the Viewfinder, turn the Corrector Ring until the Indications in the Viewfinder can be seen most clearly.**		•When extending the Viewfinder, do not grasp it by the Eyecup, because the Eyecup could become detached from the Viewfinder. •Do not apply any pressure on the Viewfinder except when extending or retracting it. •Be sure to retract the Viewfinder after filming.


◄TRACKING►
DATE
TIME
SHIFT
SET
DATE/TIME

The Built-in Lithium Battery

A built-in rechargeable lithium battery maintains the operation of the built-in clock when the Movie Camera is turned off. When the Movie Camera is in operation, this battery is recharged automatically. However, if the Movie Camera is not used for a very long time, the lithium battery can become exhausted. In this case, the Indication " ⊗ " in the Viewfinder flashes and the date and time return to the initial Indication "1. 1. 1990".

If the Indication " ⊗ " in the Viewfinder flashes for approx. 10 seconds when turning the Movie Camera on the lithium battery needs to be recharged as follows:

1 **Connect the Movie Camera to the AC Adaptor.**

2 **Switch on the Movie Camera.**

3 **Take out the Video Cassette and wait for approx. 4 hours.**
- After the lithium battery has been charged for approx. 4 hours, it can maintain the operation of the clock for approx. three months.

Information for your safety

> **WARNING**
> THE LITHIUM BATTERY IN THIS EQUIPMENT MUST ONLY BE REPLACED BY QUALIFIED PERSONNEL. WHEN NECESSARY, CONTACT YOUR LOCAL PANASONIC SUPPLIER.

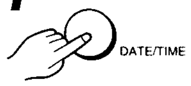
Title | *Procedure* | *Remarks, etc.*

Setting the Date and Time

Before setting, attach the charged Battery Pack or connect the AC Adaptor to the Movie Camera and turn the Movie Camera on.

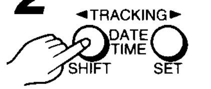
For example: To set the clock to October 15, 1994, 12:30...

1



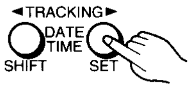
Press the [DATE/TIME] Button.

2


◄TRACKING►
DATE
TIME
SHIFT
SET

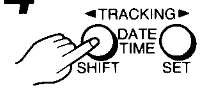
Keep pressed to make the "Year" portion flash.

3


◄TRACKING►
DATE
TIME
SHIFT
SET

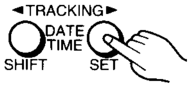
Press to set to "1994".

4


◄TRACKING►
DATE
TIME
SHIFT
SET

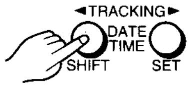
Press to make the "Month" portion flash.

5


◄TRACKING►
DATE
TIME
SHIFT
SET

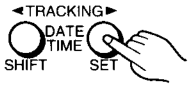
Press to set to "10".

6


◄TRACKING►
DATE
TIME
SHIFT
SET

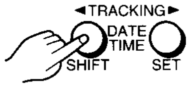
Press to make the "Day" portion flash.

7


◄TRACKING►
DATE
TIME
SHIFT
SET

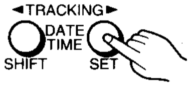
Press to set to "15".

8


◄TRACKING►
DATE
TIME
SHIFT
SET

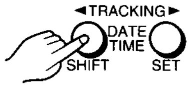
Press to make the "Hour" portion flash.

9


◄TRACKING►
DATE
TIME
SHIFT
SET

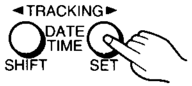
Press to set to "12".

10


◄TRACKING►
DATE
TIME
SHIFT
SET

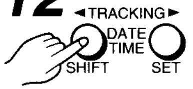
Press to make the "Minute" portion flash.

11


◄TRACKING►
DATE
TIME
SHIFT
SET

Press to set to "30".

12


◄TRACKING►
DATE
TIME
SHIFT
SET

Press to start the clock.

- **Changing the Figures of the Date/Time Indication**

By pressing the [SET] Button repeatedly, the Date/Time Indication can be changed in the following order.

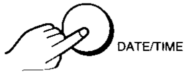
For example:

Year:	**1990**→1991→ ....2089→**1990**→...
Month:	**1**→2→ ....→12→**1**→...
Day:	**1**→2→ ....→31→**1**→...
Hour:	**0**→1→ ....→23→**0**→...
Minute:	**00**→01→................→59→**00**→...

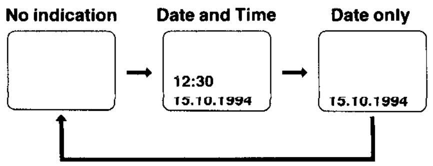
- When the [SET] Button is kept pressed, the figures change more quickly.
- If you make a mistake during setting, start again from the beginning.

Inserting and Deleting the Date and Time

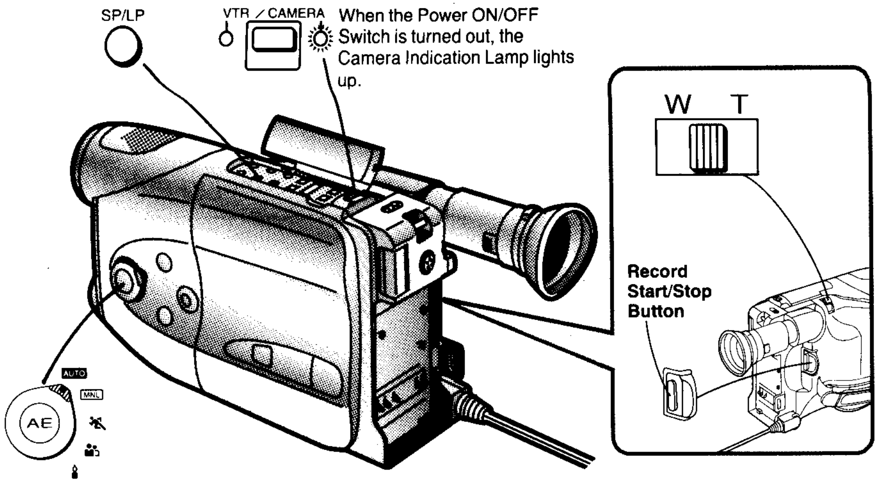
The Date and Time Indications can be inserted and deleted during filming as well as in the Filming Pause Mode.



By pressing this button repeatedly, the Date/Time Indication in the Viewfinder can be changed in the following order.
Select the desired indication.


No indication
Date and Time
Date only
12:30
15.10.1994
15.10.1994

Movie Camera Set-Up complete, now ready to use.



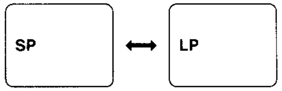
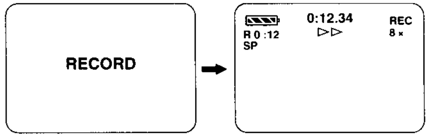
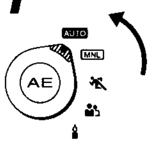
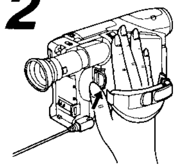
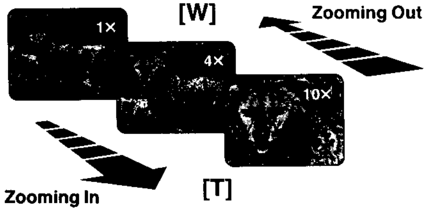
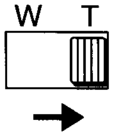
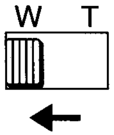
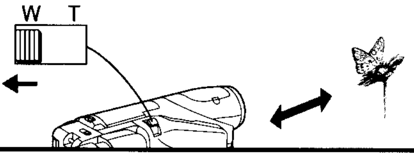
When the Power ON/OFF Switch is turned out, the Camera Indication Lamp lights up.

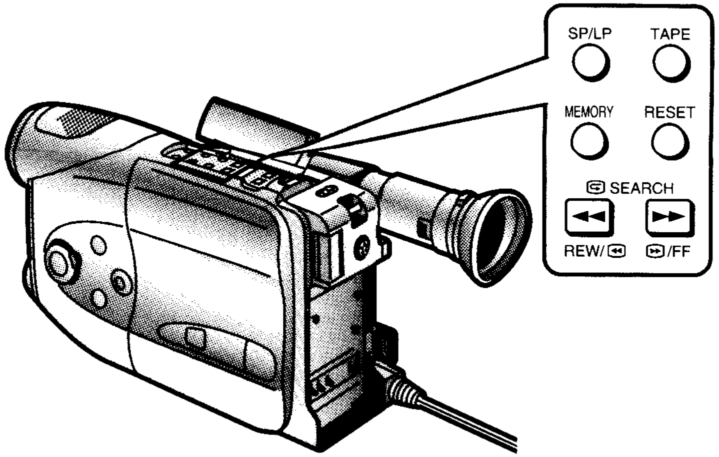
Record Start/Stop Button

Index Signals (VISS)

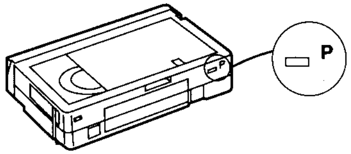
The "INDEX" Indication appears briefly in the Viewfinder while an index signal is being recorded. The index signals make possible the use of the VHS Index Search or Intro Scan Function when playing back the tape on a VTR equipped with these functions.
An index signal is recorded automatically in the following cases:

- When recording is started for the first time after attaching the Battery Pack.
- When recording is restarted after exchanging the cassette or after pressing the [VTR/CAMERA] Button.

Title	*Viewfinder*	*Procedure*	*Remarks, etc.*
Starting Filming (Recording)  •Press the [SP/LP] Button, the indication in the Viewfinder changes. "SP" means Standard Play. Filming is possible for the time indicated on the video cassette. "LP" means Long Play. Filming is possible for approximately double the time indicated on the video cassette. •Selection of the recording speed is only possible in the Filming Pause Mode.	 For the detailed explanations for each indication in the Viewfinder, see p. 16. Shown above is a typical example of the indications visible when filming in the Auto Mode.	**1**  **Confirm that the [AE] Dial is set to "AUTO".** **2**  **Turn Power ON/OFF switch out.** **Press Record Start/Stop Button.**	**■ To Pause the Filming** Press the Record Start/Stop Button again. The "PAUSE" Indication appears in the Viewfinder. •If the Movie Camera is left in the Filming Pause Mode for more than 6 minutes, it will automatically switch off to protect the tape and to conserve battery power. To resume filming from this condition, turn the Power ON/OFF Switch in (the Movie Camera is switched off) and then turn it out again. **■ To Stop Filming** Turn the Power ON/OFF Switch in.
Making the Subject Larger or Smaller During Filming **This Function also operates in the Filming Pause Mode.** •The zoom range extends from 1× to 10×. •In the maximum tele setting, the focus can be adjusted only for subjects at a distance of more than 1.5 m from the lens.	 •The Zoom Magnification Indication in the Viewfinder changes.	**1** **■ Zooming In**  **"T" means Tele.** **■ Zooming Out**  **"W" means Wide.** •The zooming speed varies depending on how far the [W • T] Zoom Lever is pushed towards "W" or "T". (The further it is pushed, the faster the zooming speed becomes.)	**■ Using the Macro Close-up Function** After keeping the [W • T] Zoom Lever pressed toward "W" to zoom to the maximum wide-angle setting, the subject can be focussed down to a minimum distance of only 5 mm between lens and subject. •As the depth of field is very small in this mode, even slight camera movements can cause the subject to go out of focus. Therefore, it is recommended to use a tripod (optional). •When shooting pictures in a photo album or a similar situation with insufficient lighting, use a Video DC Light (optional). 

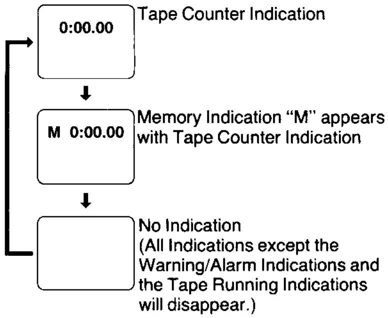


Video Cassette



When using a video cassette carrying the “P” mark or an S-VHS-C video cassette, the Remaining Tape Counter Indication may not be very precise.

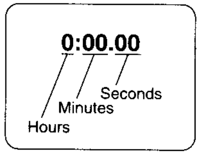
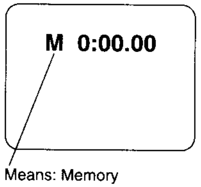
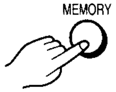
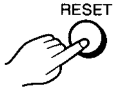
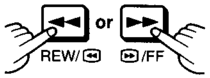
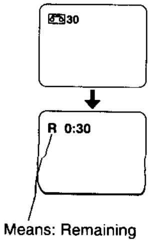
At every press of the [MEMORY] Button, the Counter Indication will change as follows:



Tape Counter Indication

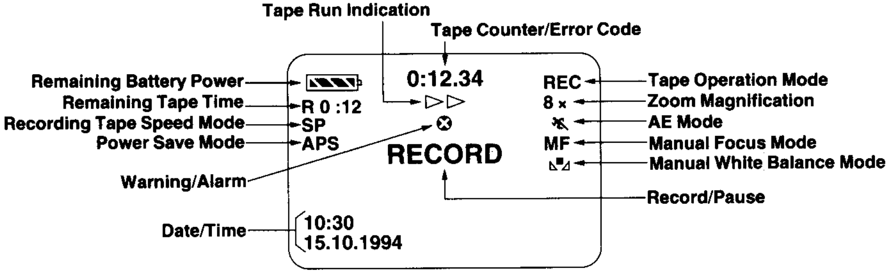
Memory Indication “M” appears with Tape Counter Indication

No Indication
(All Indications except the Warning/Alarm Indications and the Tape Running Indications will disappear.)

Title	*Viewfinder*	*Procedure*			*Remarks, etc.*
Using the Tape Counter Indication The Tape Counter in the Viewfinder shows the elapsed recording or playback time in hours, minutes and seconds. Resetting the Tape Counter to “0:00.00” by pressing the [RESET] Button before starting to film makes it easy to keep track of the elapsed recording time.		**1** ■ **To Reset the Tape Counter:** 			•The Tape Counter Indication does not change during playback of tape on which recording has never been made. •Taking out the Cassette or removing the Battery Pack automatically resets the Tape Counter Indication to “0:00.00”. •When the tape is rewound further than the tape counter position “0:00.00”, the minus sign “−” appears in front of the Tape Counter Indication.
Using the Memory Function When the Tape Counter is reset to “0:00.00” at the beginning of the desired scene and the Memory Indication “M” is turned on, the tape will stop automatically at the “0:00.00” position when rewinding or fast-forwarding it.		**1** ■ **To Make the “M” Indication Appear:** 	**2** ■ **To Reset the Tape Counter:** 	**3** 	
Confirming the Remaining Tape Time During recording or playback, the Remaining Tape Time is automatically displayed in the Viewfinder.		**1** Select the Tape Length Indication (“ ▭ 30” or “ ▭ 45”) that matches the Video Cassette being used.	■ **To Check the Tape Length of the Video Cassette Being Used while the Remaining Tape Time is Displayed:** The Tape Length Indication “ ▭ 30” or “ ▭ 45” is displayed for approx. 2 seconds, and then the Remaining Tape Time Indication will again appear instead of it.		•While the Movie Camera calculates the Remaining Tape Time, the “R” Indication flashes in the Viewfinder. •When the Remaining Tape Time becomes less than 2 minutes, the Indication “R” and the Remaining Tape Time start to flash. ■ **When Inserting an EC45-type Video Cassette** Press the [TAPE] Button to change the Tape Length Indication in the Viewfinder to “ ▭ 45” so that the Remaining Tape Time Indication will be correct.

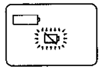
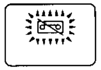
Quick Reference Guide to the Indications in the Viewfinder

The following indications are displayed in the Viewfinder to inform you about the condition of the Movie Camera.


Tape Run Indication
Tape Counter/Error Code
Remaining Battery Power
Remaining Tape Time
Recording Tape Speed Mode
Power Save Mode
Warning/Alarm
Date/Time
0:12.34
R 0 :12
SP
APS
RECORD
REC
8 ×
MF
10:30
15.10.1994
Tape Operation Mode
Zoom Magnification
AE Mode
Manual Focus Mode
Manual White Balance Mode
Record/Pause

- The illustrations in the following explanations show only the indication(s) pertaining to the corresponding explanation.

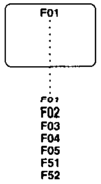
1 Warning/Alarm Indications

Viewfinder	Condition	Page
	Condensation Condensation has formed inside the Movie Camera. Wait until the "U 10/ 💧 " Indication disappears.	48
	Video Head Clogging The video heads are dirty.	47
	**Remaining Battery Power** The 4 segments of the Remaining Battery Power Indication begin to disappear one after another as the power of the Battery Pack weakens. When only the last segment remains, the " ▭ " Indication starts to flash in the centre of the Viewfinder. When the last segment has disappeared, the "CAMERA" Indication Lamp flashes for a few seconds, and then the Movie Camera automatically switches itself off. Replace the exhausted Battery Pack with a fully charged one.	24
	**Tape** When no video cassette is inserted or when the tab of the inserted video cassette is broken out, this indication flashes. Insert a video cassette with intact tab.	8, 45

1 Warning/Alarm Indications (cont.)

Viewfinder	Condition	Page
	Built-in Lithium Battery The Built-in Lithium Battery is exhausted. Recharge it.	11
	End of the Tape When the tape has reached its end, indication appears. Insert a new cassette.	—
	Anti-Ground-Filming When the Movie Camera is tilted more than about 70° from its normal horizontal position during filming (with the [POWER SAVE] Switch set to "ON"), the Movie Camera automatically switches over to the Filming Pause Mode. If the Movie Camera is then returned to its normal horizontal filming position, the "CHK" Indication will flash in the Viewfinder.	38

2 Error Code Indications

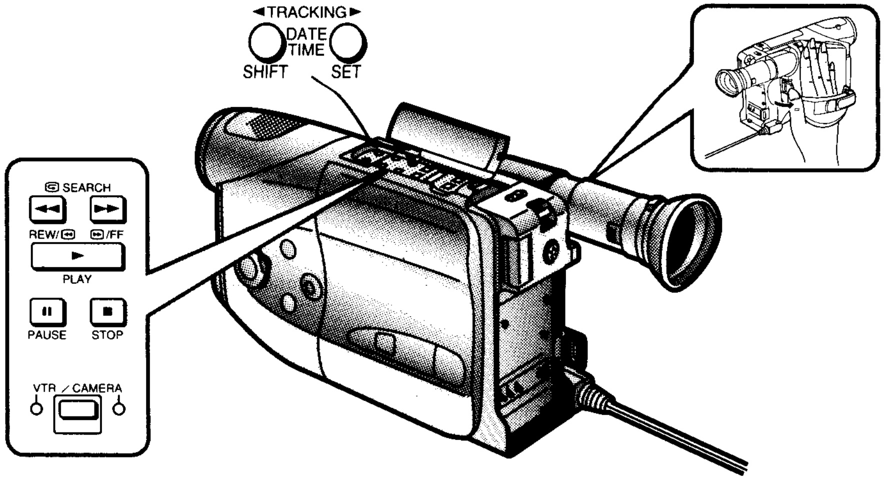
Viewfinder	Condition	Page
 F01 F01 F02 F03 F04 F05 F51 F52	**Error Code** When the "F" Indication appears in the Viewfinder, some malfunction has occurred. If the indicated error code is between "F01" and "F05", the Movie Camera will turn itself off automatically one minute after the "CAMERA" Lamp has started to flash. (When the indication is "F51" or "F52", the Movie Camera will not turn off automatically.) In this case, write down the error code and tell it to the service personnel.	—

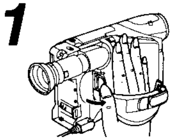
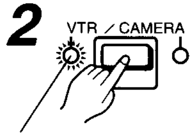
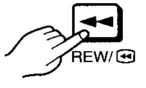
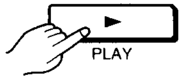
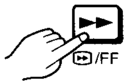
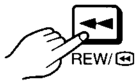
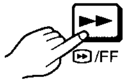
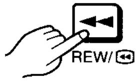
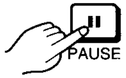
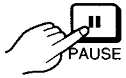
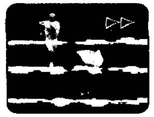
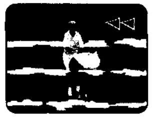
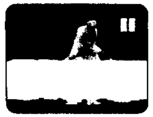
Quick Reference Guide to the Indications in the Viewfinder (cont.)

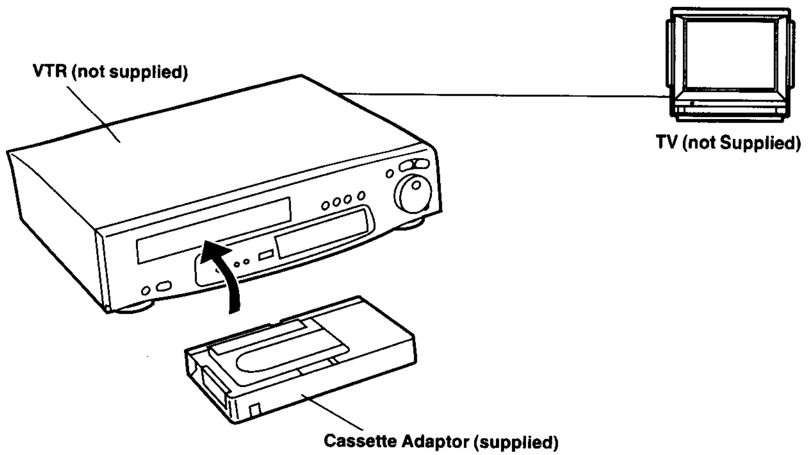
3 Filming/Playback Indications

Viewfinder	Condition	Page
RECORD	**Filming Mode (large indication)** When the Record Start/Stop Button is pressed from the Filming Pause Mode, this indication is displayed for approx. 1 second.	12
REC	**Filming Mode (small indication)** "REC" means Recording.	12
▷▷	**Tape Run Indication**	12
PAUSE	**Filming Pause Mode (large indication)** When the Record Start/Stop Button is pressed from the Filming Mode, this indication is displayed for approx. 1 second.	13
PAUSE	**Filming Pause Mode (small indication)**	13
CHK	**Rec Check Mode** "CHK" means Check.	36
SP	**Recording Speed Indication** SP: means Standard Play. LP: means Long Play. The mode can be selected with the [SP/LP] Button.	12
▷	**Playback/Search Mode**	21 37
▷▷	**Fast Forward/Cue Mode**	20
◁◁	**Rewind/Review/Search Mode**	20 36
❚❚	**Still Playback Mode**	21
0:00.00	**Tape Counter**	14
M 0:00.00	**Tape Counter with activated Memory Function** "M" means Memory.	14
R 0:30	**Remaining Tape Time** "R" means Remaining.	14

Viewfinder	Condition	Page
▭30	**Tape Length** The Tape Length Indication can be selected with the [TAPE] Button.	14
12:30 15.10.1994	**Date and Time**	11
10×	**Zoom Magnification** When zooming in on a subject, the indicated zoom magnification value increases.	12
☼	**Manual White Balance Mode**	29
MNL	**Manual Filming Mode** "MNL" means Manual.	26 28
🏃	**Sports Mode** This indication is displayed when the Sports Mode has been selected.	32
👤	**Portrait Mode** This indication is displayed when the Portrait Mode has been selected.	32
🕯	**Low Light Mode** This indication is displayed when the Low Light Mode has been selected.	32
MF	**Manual Focus Mode** "MF" means Manual Focus.	26
INDEX	**Index** While this indication is visible, an index signal is being recorded.	13
APS	**Power Save Mode** This Indication is displayed when the [POWER SAVE] Switch set to "ON".	38



Title	*Procedure*				*Remarks, etc.*
Playing Back on the Viewfinder or the TV **[To Play Back Via TV Set]** 1. Connect the Movie Camera to a TV set. 2. Follow steps 1 through 4 opposite.	**1**  **Turn Power ON/OFF switch out.**	**2**  **The "VTR" Indication Lamp lights up.**	**3**  **The tape will stop automatically when it reaches the beginning**	**4** 	•When the tape reaches its end during playback, it will be rewound automatically. **■ To Stop the Playback** Press the [STOP] Button.
Rewinding or Fast-Forwarding the Tape Perform these operations with the Movie Camera in the VTR Stop Mode ("VTR" Indication Lamp is lit).	**■ For Fast-Forward** 	**■ For Rewind** 			•When the tape reaches its end during Fast-Forward, it will be rewound automatically. •When the tape reaches the beginning during Rewind, it will stop automatically.
Using the Cue, Review and Still Playback Functions During Normal Playback	**■ For Cue Playback**  **Keep pressed.**	**■ For Review Playback**  **Keep pressed.**	**■ For Still Playback** 	**To return to normal playback** 	•The sound will be played back only during normal playback. •In the Cue, Review and Still Playback Modes, horizontal noise bars appear in the picture, or the picture may become black and white or distorted. However, this is normal and not a malfunction. •The horizontal noise bars have a different pattern in the SP mode and LP mode. The illustrations on the left show the noise bar pattern of the LP mode.
	Cue Playback Mode 	**Review Playback Mode** 	**Still Playback Mode** 		

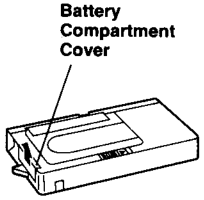

VTR (not supplied)
TV (not Supplied)
Cassette Adaptor (supplied)

Title

Playing Back on VTR, use the Supplied Cassette Adaptor

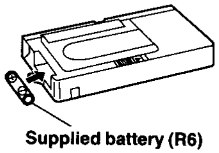
Procedure

1


Battery Compartment Cover

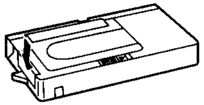
Remove the Battery Compartment Cover.

2


Supplied battery (R6)

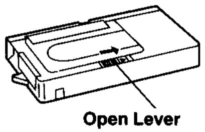
Insert the Battery (R6).

3



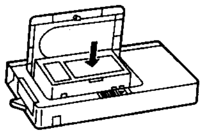
Re-attach the Battery Compartment Cover.

4



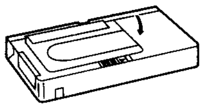
Slide the Open Lever.

5



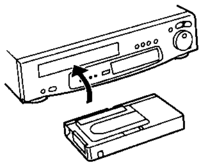
Insert the recorded video cassette.

6



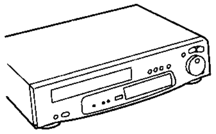
Close the Top Cover.

7



Insert the Cassette Adaptor into the VTR.

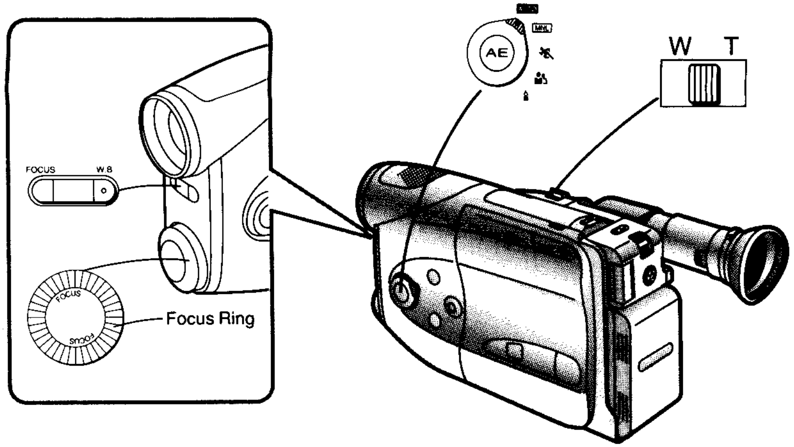
8



Operate the VTR.

Remarks, etc.

- For optimum picture quality, it may be necessary to adjust the tracking control on the VTR.
- Never insert the empty Cassette Adaptor (without a video cassette) into a VTR.
- Do not insert the Cassette Adaptor into a VTR and take it out again without running the tape, because this could loosen the tape.
- When loading the video cassette into the Cassette Adaptor, do not touch the tape directly.
- After use, take the video cassette out from the Cassette Adaptor.

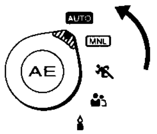


Title	Procedure	Remarks, etc.

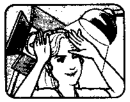
Filming with the Auto Focus Mode

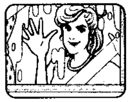
When the [AE] Dial is set to "AUTO", the Movie Camera will automatically focus precisely on almost any subject located in the centre of the Viewfinder.
- If you want to film with automatic focussing in one of the other settings of the [AE] Dial, press the [FOCUS] Button to make the "MF" Indication in the Viewfinder disappear.

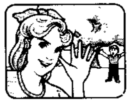
1

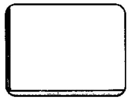


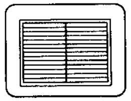
In the following filming situations, use the Manual Focus Mode:

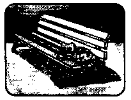
①


②


③


④


⑤


⑥


① A subject with shiny surfaces or much light reflection

② A subject behind glass that is covered with dirt, dust or water drops

③ A subject with a part of it near the Movie Camera and another parts far away from it.

④ A flat surface, e.g. a white wall

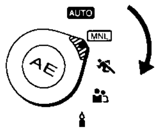
⑤ A subject with horizontal stripes

⑥ An oblique subject

- A fast-moving subject
- A subject with a dark surface
- When using the Macro Close-up Function, special lenses or filters

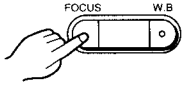
Filming with the Manual Focus Mode

1



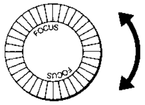
The "MNL" Indication appears in the Viewfinder.

2



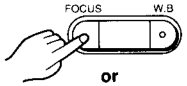
The "MF" Indication appears in the Viewfinder.

3

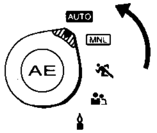


Adjust the Focus Ring until the subject is in focus.

■ To Cancel the Manual Focus Mode



or



Press the [FOCUS] Button to make the "MF" Indication disappear. Or reset the [AE] Dial to "AUTO".

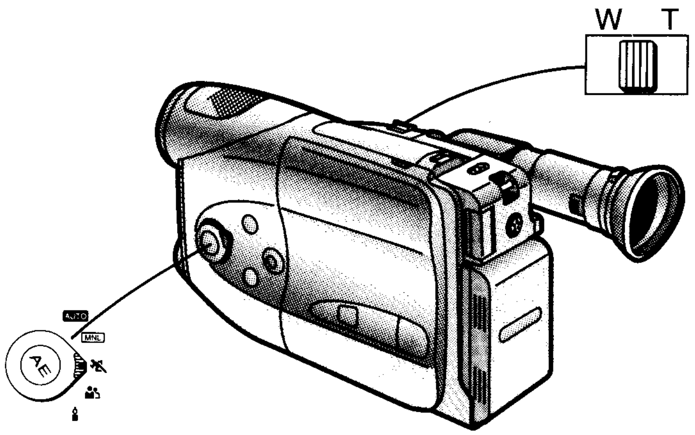
■ Hints for Manual Focus Adjustment

①

②

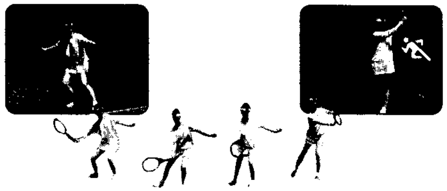
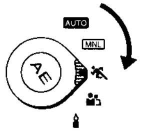
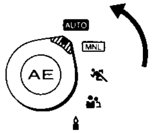
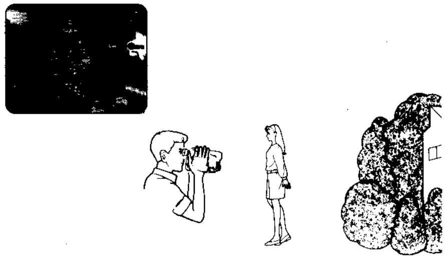
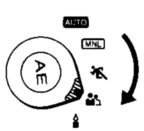
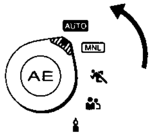
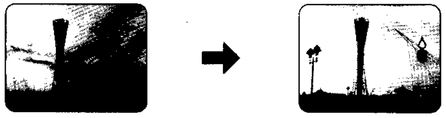
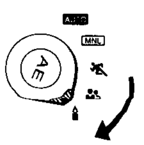
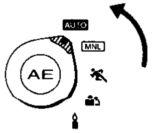
① Be sure to adjust the focus after zooming in on the subject.

② Adjusting the focus with the lens zoomed in on the subject assures precisely focussed pictures even when subsequently zooming back.
- If the focus is adjusted with the lens in the wide-angle setting, the subject may go out of focus when zooming in on the subject.

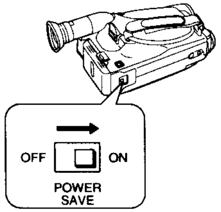


Notes for Use of the Sports Mode

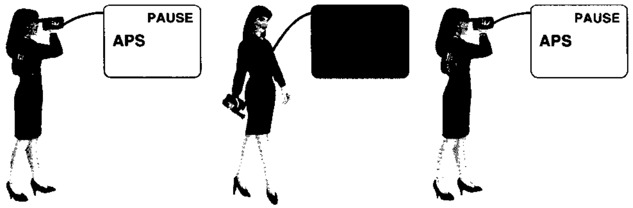
- The subject must be brightly lit by sunlight or a Video DC Light (optional), with little shade.
- When filming under fluorescent, mercury-vapor or natrium lamps, the picture will be adversely influenced by flickering.
- When a scene filmed in the Sports Mode is played back in the normal playback mode, the picture movement may not be as smooth as normal.
- If the picture is recorded with high shutter speed, the playback picture will be slightly darker.

Title	*Viewfinder*	*Procedure*		*Remarks, etc.*
Filming Fast-Moving Subjects **■ Using the Sports Mode** This function makes it possible to obtain pictures with minimized blur when filming fast-action scenes such as tennis or other types of sports. When scenes recorded with the Sports Mode are later played back on a VTR, still and slow motion playback with very sharp picture contours and brilliant details can be obtained.		**1** 	**To Return to the Normal Filming Mode** 	- In the Sports Mode, the shutter speed is automatically adjusted (between 1/50 s and 1/500 s) according to the brightness of the scene, so even fast movements will be captured in sharp and stable pictures. - If the surrounding illumination is weak, the " 🏃 " Indication flashes. In this case, the Sport Mode may not be effective.
Making People Stand out Sharply from the Background **■ Using the Portrait Mode** In the Portrait Mode, the Iris is automatically set to its maximum opening which results in a very small depth-of-field. This causes the subject in the center of the picture to be sharply focussed while the background is blurred.		**1** 	**To Return to the Normal Filming Mode** 	- The shutter speed is automatically adjusted between 1/50 s and 1/1500 s according to the brightness of the subject. - Zooming in on the subject by pushing the [W • T] Zoom Lever toward "T" increases the blurring of the background.
Filming Dark Scenes More Brightly **■ Using the Low Light Mode** This increases the sensitivity and brightens up the picture.		**1** 	**To Return to the Normal Filming Mode** 	- Even if this mode is used for outdoor filming in daylight, the result will be almost the same as when filming in the other mode.

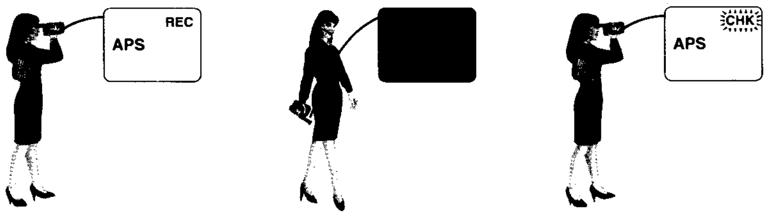
Using the Power Save Functions

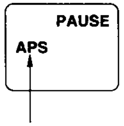
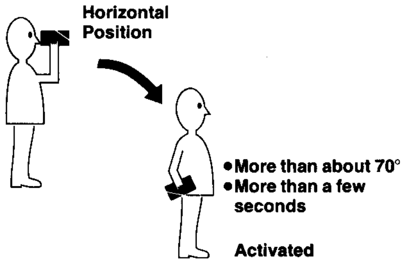
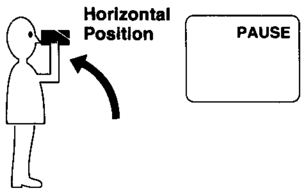
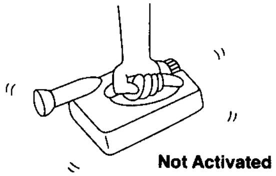
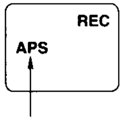
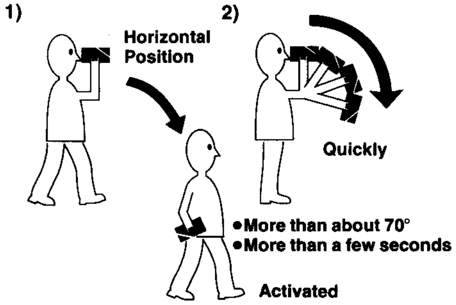
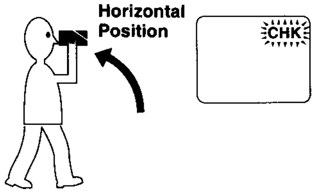
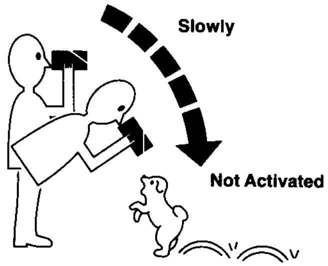

OFF
ON
POWER SAVE

❶ Auto Power Save (in the Filming Pause Mode)


PAUSE
APS
PAUSE
APS

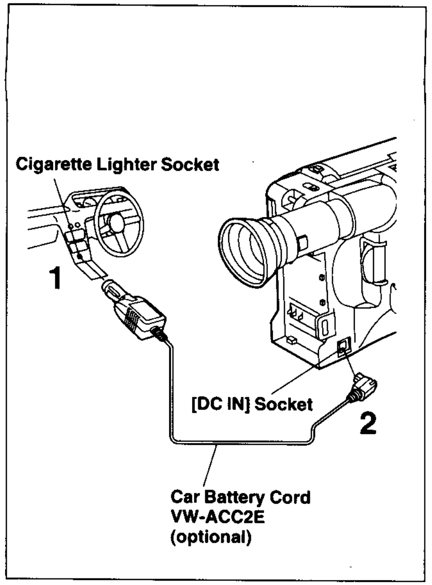
❷ Anti-Ground-Filming (in the Filming Mode)


REC
APS
CHK
APS

	Movie Camera Mode	**Becomes Activated:**	**Conditions of Move Camera**	**Result**	**To Resume Filming**	**Operating Restrictions**
❶ **Auto Power Save Function**	**During Filming Pause** **Viewfinder**  The "APS" Indication is displayed.	 Horizontal Position •More than about 70° •More than a few seconds Activated •When Movie Camera is tilted downwards by more than about 70° from the normal horizontal filming position for more than a few seconds.	 •Viewfinder: OFF •Auto Focus: OFF •Zoom Motor: OFF •VTR Indication: Flash (Green) 	•**Saving Power** The Battery Pack can be used longer for filming. •**Preventing Lengthy Filming of the Ground** The Movie Camera automatically prevents filming even when the Record Start/Stop Button is pressed accidentally.	 Horizontal Position PAUSE •When the Movie Camera is returned to an approximately horizontal position, the Movie Camera is automatically put into the Filming Pause Mode and the filming can be restarted by pressing the Record Start/Stop Button.	When holding the Movie Camera with the Grip Belt facing upwards.  Not Activated
❷ **Anti-Ground-Filming Function**	**During Filming** **Viewfinder**  The "APS" Indication is displayed.	 1) Horizontal Position 2) Quickly •More than about 70° •More than a few seconds Activated •When tilting the Movie Camera downwards by more than about 70° from the normal horizontal filming position for more than a few seconds, and: 1) Walking with the Movie Camera held in the hand or; 2) tilting the Movie Camera quickly in the case of not walking.	 •Viewfinder: OFF •Auto Focus: OFF •Zoom Motor: OFF •Filming Mode ↓ Filming Pause Mode •VTR Indication: Flash (Green) 	•**Saving Power** **The Battery Pack can be used longer for filming.** •**Preventing Lengthy Filming of the Ground** The Movie Camera automatically switches over to the Filming Pause Mode to stop the unintentional filming when forgetting to press the Record Start/Stop Button at the end of a scene.	 Horizontal Position CHK •When the Movie Camera is returned to an approximately horizontal position, the “CHK” (=check) Indication will flash in the Viewfinder. Since the filming may have continued for several seconds, rewind the tape a little using the Camera Search Function (p. 36) to locate the exact end of the last desired scene, and then start filming again.	When slowly tilting the Movie Camera downwards during filming.  Slowly Not Activated •This function is designed so that it is not activated when the Movie Camera is slowly tilted downwards during filming. •The Anti-Ground-Filming feature is not intended to replace the manual stopping of filming.

Note: When changing locations between scenes or when not planning to film for a longer period of time, it is recommended to turn off the Movie Camera with the Power ON/OFF Switch.

Using the Car Battery Cord (Optional)


Cigarette Lighter Socket
1
[DC IN] Socket
2
Car Battery Cord
VW-ACC2E
(optional)

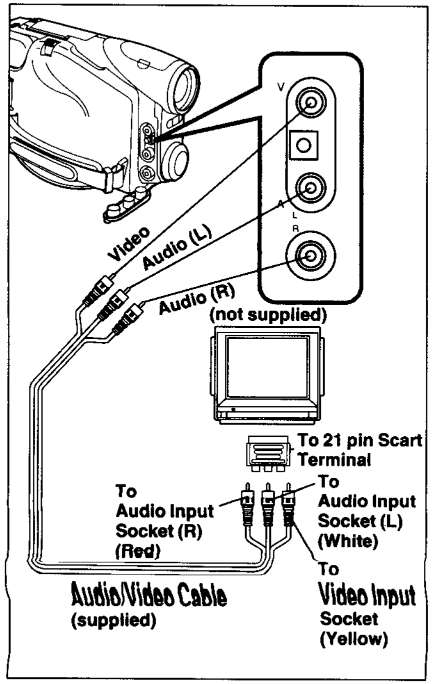
Notes:

1. The Car Battery Cord can only be used with 12 V DC negative-grounded vehicles.
2. Do not start the car engine while the Movie Camera is being powered by the car battery.
3. If the voltage drops suddenly e.g. because the car air-conditioner is turned on, the Movie Camera is automatically turned off to protect it. Wait about 10 seconds before turning it on again.
4. Some cars, RVs and campervans use 24 V. Please confirm with vendor that your vehicle uses 12 V before using the Car Battery Cord. If used on 24 V, damage may occur and is not covered by warranty.

1 **Start the engine and then plug the Car Battery Cord into the Cigarette Lighter Socket.**

2 **Connect the other end of cord to the DC Input Socket on the Movie Camera.**

Playing back on a TV Set with 21 pin Scart Terminal

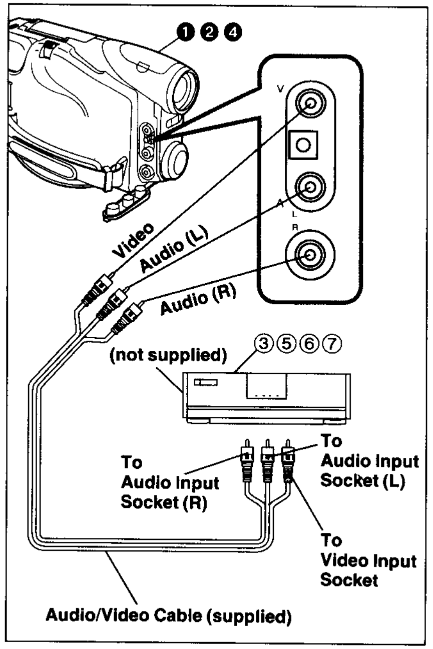

V
A
L
R
Video
Audio (L)
Audio (R)
(not supplied)
To 21 pin Scart Terminal
To Audio Input Socket (R) (Red)
To Audio Input Socket (L) (White)
To Video Input Socket (Yellow)
Audio/Video Cable (supplied)

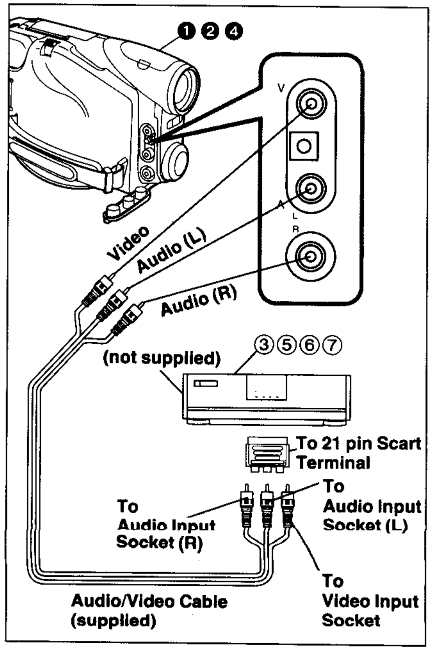
Using the Supplied 21 pin Adaptor and Audio/Video Cable

Connect after turning off the Movie Camera and the TV Set.

■ **Activate the Playback Operation**
(p. 20)

Editing a Previously Recorded Tape


❶❷❹
V
A
L
R
Video
Audio (L)
Audio (R)
(not supplied)
③⑤⑥⑦
To Audio Input Socket (R)
To Audio Input Socket (L)
To Video Input Socket
Audio/Video Cable (supplied)


❶❷❹
V
A
L
R
Video
Audio (L)
Audio (R)
(not supplied)
③⑤⑥⑦
To 21 pin Scart Terminal
To Audio Input Socket (R)
To Audio Input Socket (L)
To Video Input Socket
Audio/Video Cable (supplied)

Connect the Movie Camera to the VTR using the Supplied Audio/Video Cable or 21 pin Adaptor.

■ **Operations**

Playback Unit (Movie Camera): ❶❷❹
Recording Unit (VTR): ③⑤⑥⑦

❶ Insert the recorded video cassette for playback into the Movie Camera.
Find the point on the tape where you want to cut and note the tape counter position.

❷ Rewind the tape and find the point where the dubbing is to start.

③ Insert the video cassette for recording into the VTR and put it in the Recording Pause Mode. Also read the Operating Instructions of the VTR.
The picture quality deteriorates slightly in the dubbing process, however, this can be minimized by selecting the standard recording speed (SP Mode) on the VTR.

❹ Start the playback.

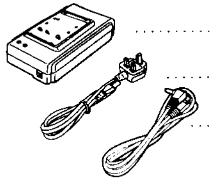
⑤ Press the Pause/Still Button to start recording.

⑥ Press the Pause/Still Button at the point where the dubbing is to end.
The VTR is now in the recording pause mode.

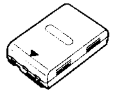
⑦ When the next scene which you want to record appears, press the Pause/Still Button one more time.

Check List for the Standard Accessories

AC Adaptor Set

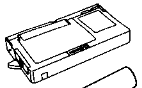


- **AC Adaptor (VSK0305)**
- **Mains Cable (VJA0733)**
- **DC Input Cable (VJA0769)**

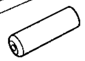


Battery Pack (VSB0200)

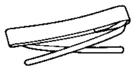
- When purchasing an additional AC Adaptor, order model number VW-AS4E.
- For Purchasing additional Battery Packs, see the list of optional accessories on.



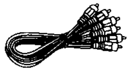
Cassette Adaptor (VW-TCA7E)



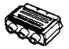
Battery (R6)



Shoulder Strap (VFC1620)

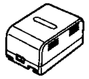
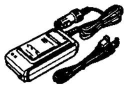
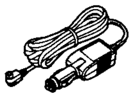
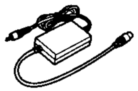
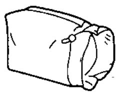
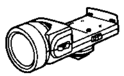
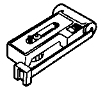
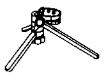
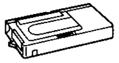
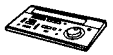
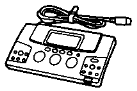
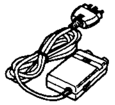


Audio/Video Cable (VJA0788)



21 pin Adaptor (VFA0151 : FOR NV-R30E/B)

Optional Accessories

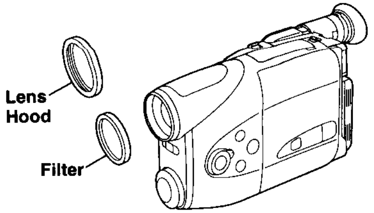
Battery Pack VW-VBS10E VW-VBH10E 	Battery Pack VW-VBS20E VW-VBH20E 	Car Battery Charger VW-KBC2E 	Car Battery Cord VW-ACC2E 	5 Pin Synchro Cord VW-K10E 
System Case VW-SHCS5E 	Soft Cover VW-SCS9E 	Video DC Light VZ-LDCS13E 	Shoe Adaptor VW-SK9E 	Filter Kit VW-LF37E
Special Effect Filter Kit (A) VW-LFA37E 	Special Effect Filter Kit (B) VW-LFB37E 	Tele Conversion Lens VW-LT3714E 	Wide Conversion Lens VW-LW3707E 	Standard Tripod VZ-CT55E
Deluxe Tripod VZ-CT75E 	Table Tripod VZ-CTT1E 	Cassette Adaptor VW-TCA7E 	Editing Controller VW-EC310E 	Editing Controller VW-EC1E 
Video Titler VW-VT1B 	RF Adaptor VW-RF7E 			

Notes:

- Consult your dealer for details of other accessories not listed here.
- When using the Video DC Light, the Shoe Adaptor (optional) is necessary.
- Some accessories listed above may not be available in some countries.

■ Lens Hood

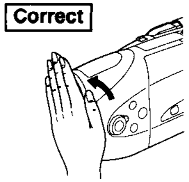
Before attaching an optional filter or conversion lens, first remove the Lens Hood from the Movie Camera.



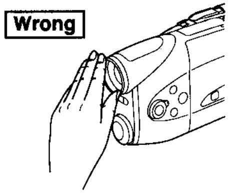
Battery Pack No.	Charging Time	Max. Filming Time
VW-VBS10E	Approx. 110 min.	Approx. 50 min.
VW-VBS20E	Approx. 220 min.	Approx. 100 min.
VW-VBH10E	Approx. 150 min.	Approx. 60 min.
VW-VBH20E	Approx. 300 min.	Approx. 120 min.

- To remove the Lens Hood, press with the palm of your hand against it and turn in the direction of the arrow.

Correct



Wrong



SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

The following flow chart describes the steps for removing cabinet parts and printed circuit boards to gain access to the items needing service.
To reassemble the unit, follow the steps in reverse order.

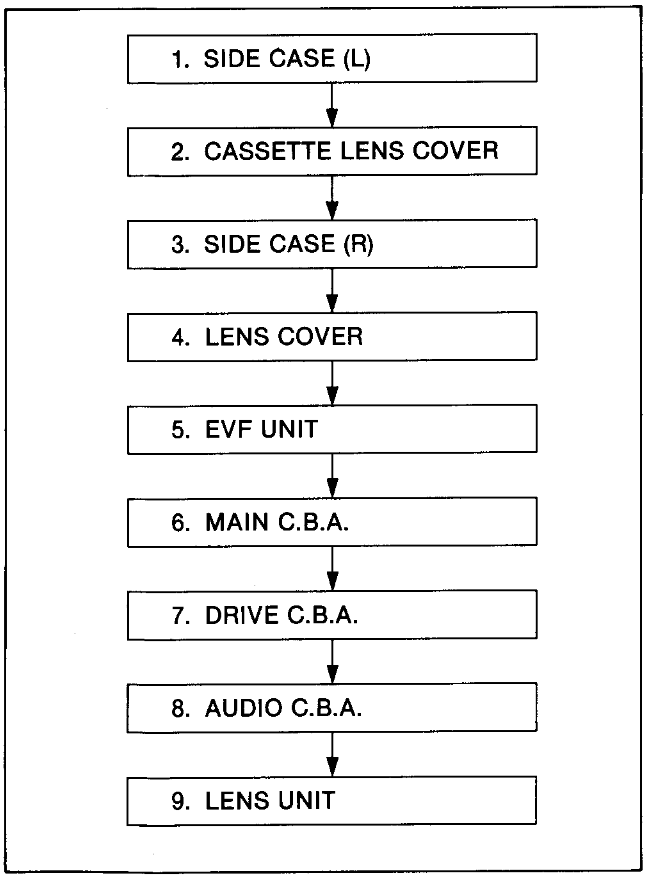

1. SIDE CASE (L)
2. CASSETTE LENS COVER
3. SIDE CASE (R)
4. LENS COVER
5. EVF UNIT
6. MAIN C.B.A.
7. DRIVE C.B.A.
8. AUDIO C.B.A.
9. LENS UNIT

Fig. D1

2-1-2. DETAILED DISASSEMBLY METHOD

1. Removal of Side Case (L).

(See Fig. D2 ①.)
(1). Remove ...... Screw(B) and Screw(C).
(See Fig. D2 ②.)
(2). Remove ...... 2 Screws(E) and 2 Screws(G).
(See Fig. D2 ③.)
(3). Remove ...... 3 Screws(H).
(See Fig. D2 ④.)
(4). Remove ...... Screw(I).
(See next page.)

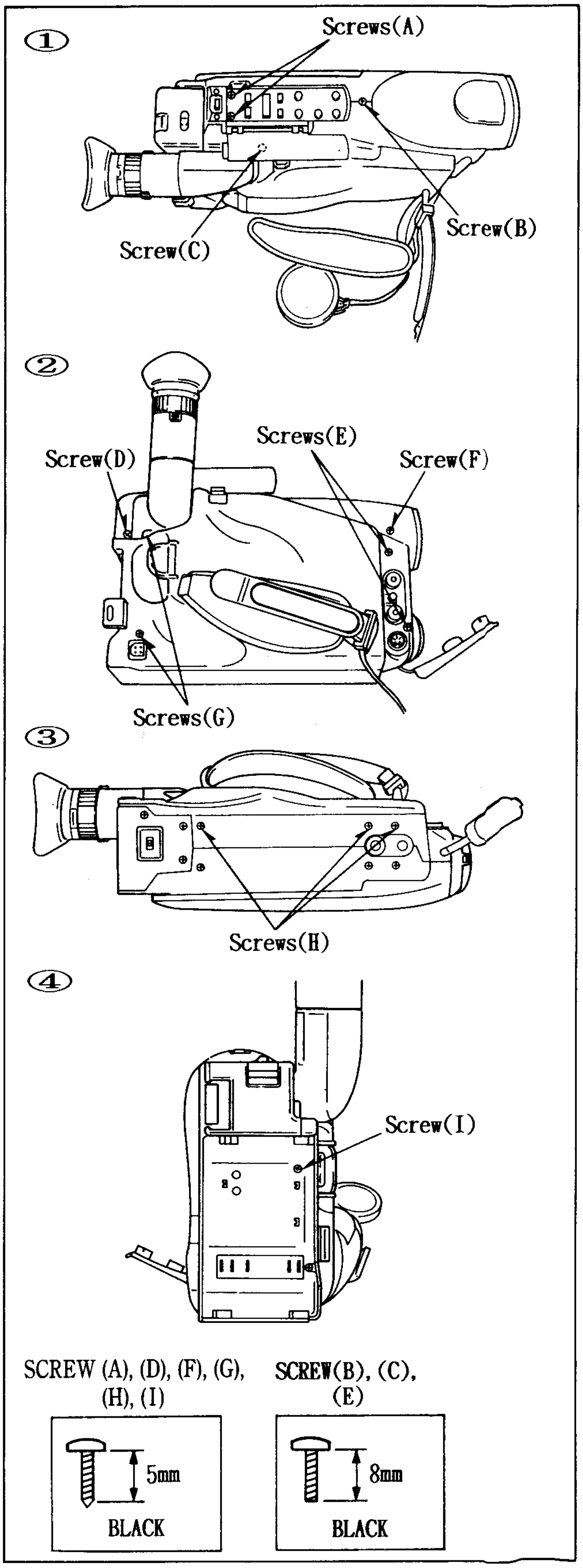

①
Screws(A)
Screw(B)
Screw(C)
②
Screw(D)
Screws(E)
Screw(F)
Screws(G)
③
Screws(H)
④
Screw(I)
SCREW (A), (D), (F), (G), (H), (I)
5mm
BLACK
SCREW(B), (C), (E)
8mm
BLACK

Fig. D2

(See Fig.D3.)
--<<Be careful Connector (A) and (B)!!>>------
(5).Slightly open the side case (L).
(6).Disconnect ....Connector(A) and Connector(B).

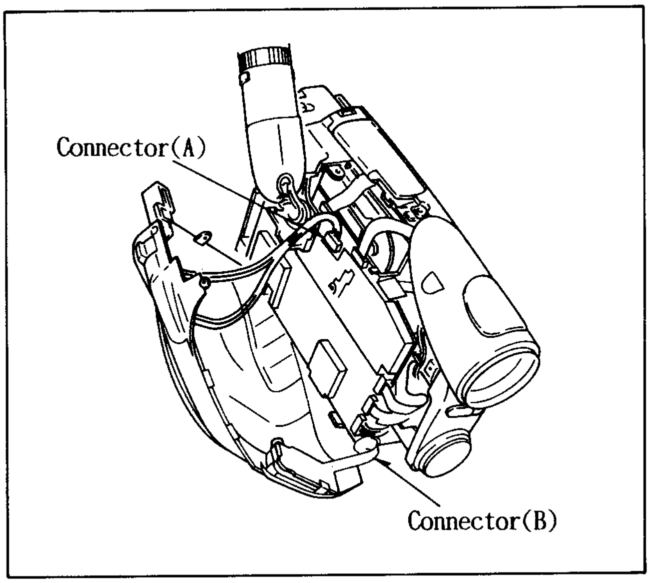

Connector(A)
Connector(B)

Fig.D3

Note:
*.Be careful that you do not break the Cables and Connectors.

2. Removal of cassette cover.

(See Fig.D4.)
(1).Remove.....2 Screws(J).

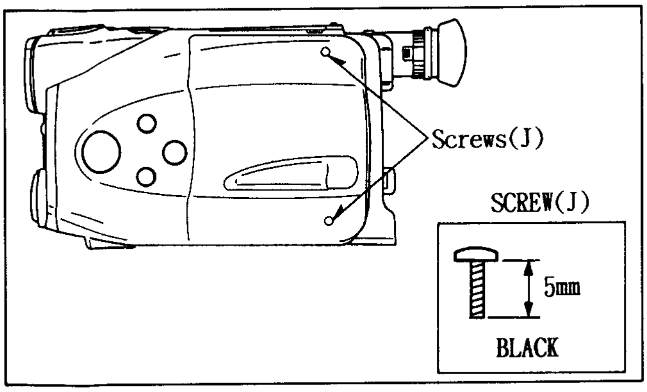

Screws(J)
SCREW(J)
5mm
BLACK

Fig.D4

3. Removal of side case (R)

NOTE:
*.To make easy disassemble, do (1) and (2).

(See Fig.D5 ①)
(1).Removal......Screw(K) and Screw(L).
(2).Un-lock......2 Locking portions(A).
(See Fig.D5 ②)
(3).Removal......Screw(M).
(See Fig.D5 ③)
(4).Removal......3 Screws(N).

(See Fig.D5 ①)
(5).Desconnect...Connector(C),Connector(D) and Connector(E)
(6).Un-lock......Locking Tab(A).
(7).Removal of VTR Operation panel.
(8).Un-lock......3 Locking Tabs(B).

NOTE1: Connector(C) located on Audio C.B.A
Cable wire for Connector(F) come from front operation C.B.A.
NOTE2:
*.Be careful that un-locking of Tab(A)and Tabs(B). These 4 Locking Tabs are hard attached.

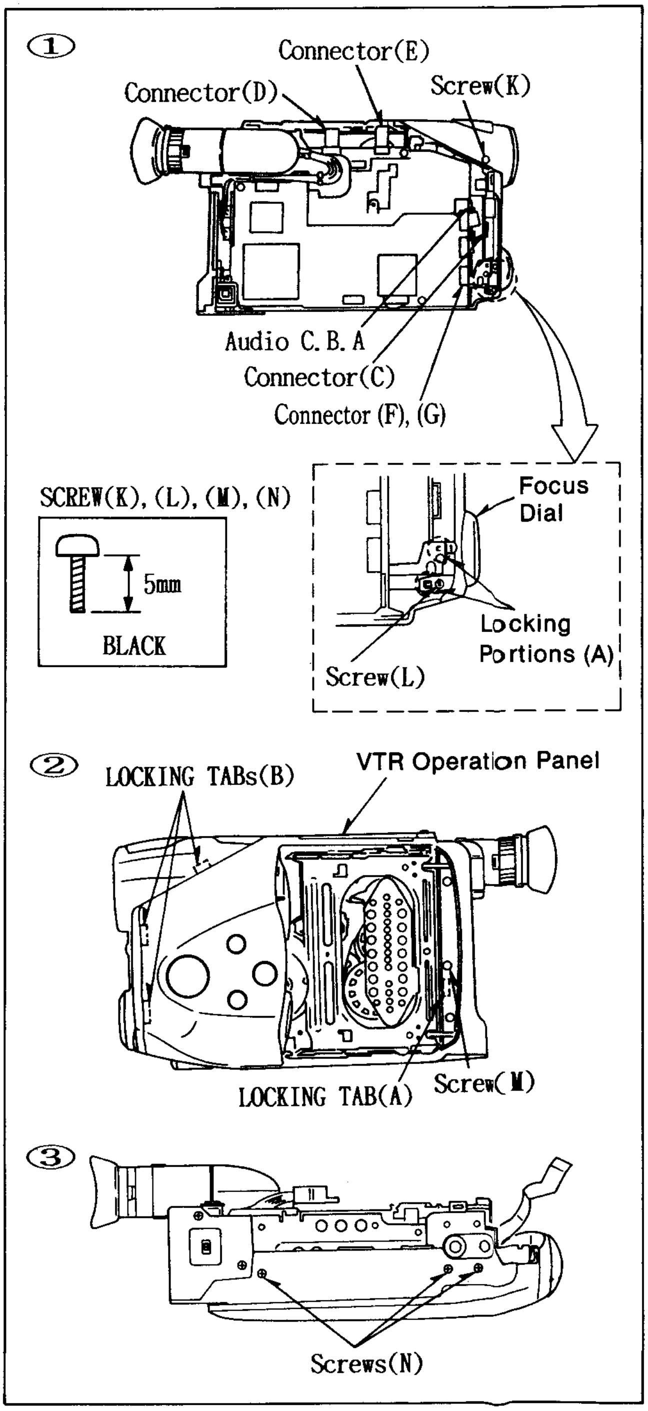

①
Connector(E)
Connector(D)
Screw(K)
Audio C.B.A
Connector(C)
Connector (F), (G)
SCREW(K), (L), (M), (N)
5mm
BLACK
Focus Dial
Locking Portions (A)
Screw(L)
②
LOCKING TABs(B)
VTR Operation Panel
LOCKING TAB(A)
Screw(M)
③
Screws(N)

Fig.D5

4.Removal of Lens cover Unit

(See Fig.D5 ①)
(1).Disconnect.....Connector(D) and Connector(E).
(2).Remove.........Screw(K) and Screw(L)
(3).Un-lock........Locking portion(A).

5. Removal of EVF Unit

(See Fig.D6 ①)
(1).Remove............Screw(0) and Screw(P).
(See Fig.D2 ②)

(See Fig.D6 ②)
(3).Disconnect........Connector(F).
(See Fig.D6 ②)
(4).Locking Portion...Locking portion(B).

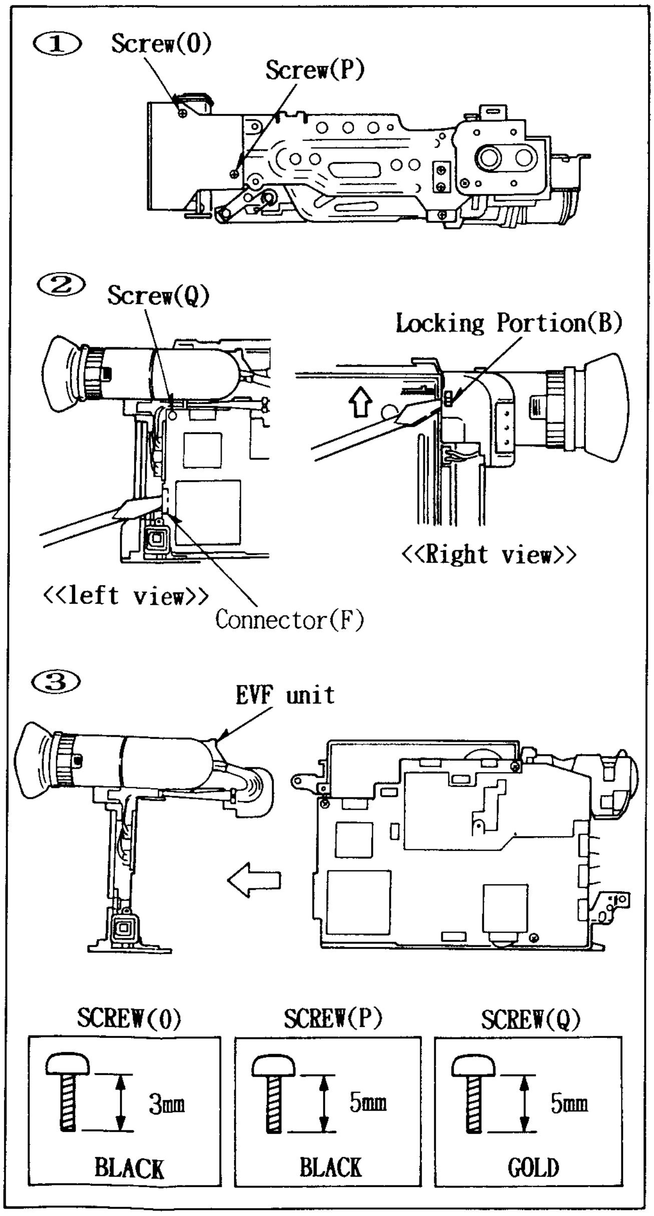

①
Screw(0)
Screw(P)
②
Screw(Q)
Locking Portion(B)
<<left view>>
Connector(F)
<<Right view>>
③
EVF unit
SCREW(0)
3mm
BLACK
SCREW(P)
5mm
BLACK
SCREW(Q)
5mm
GOLD

Fig.D6

6. Removal of Main C.B.A.

(See Fig.D7 ①)
(1).Remove.......2 Screws(R)
(2).Connector....Connector(G),(H),(I),(J)and (K).
(See Fig.D7 ②)
(3).Connector......Connector (L).

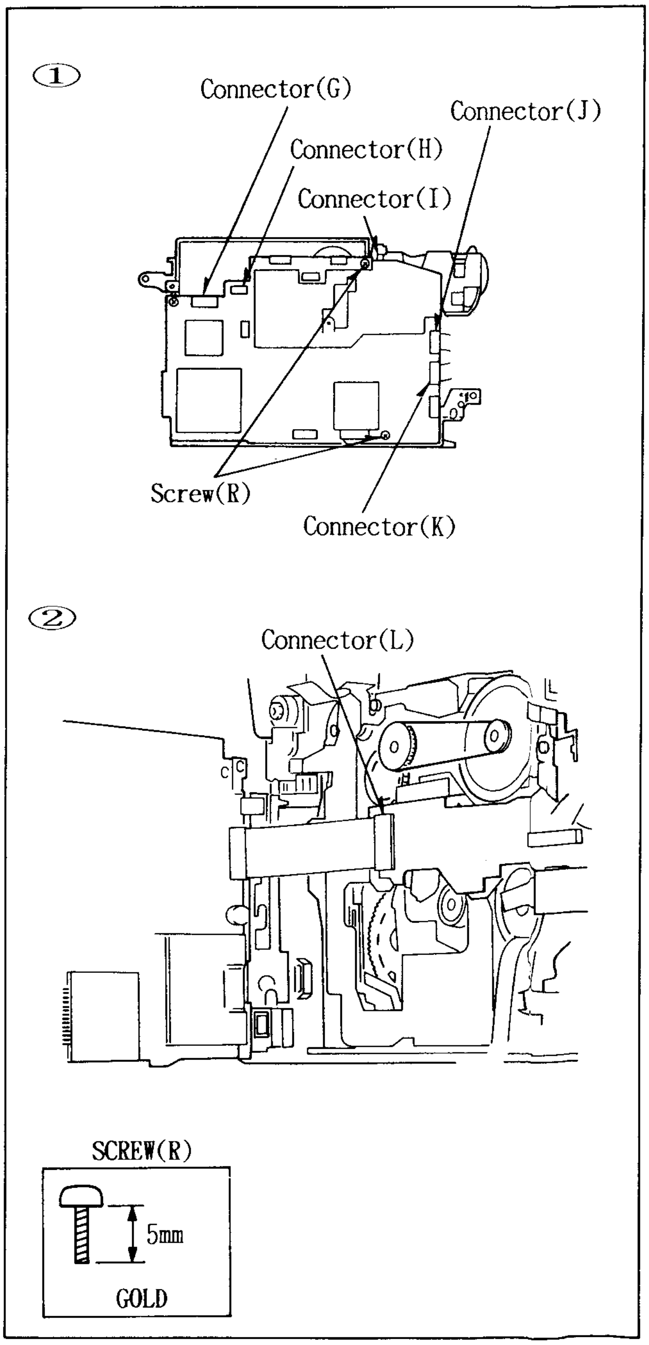

①
Connector(G)
Connector(J)
Connector(H)
Connector(I)
Screw(R)
Connector(K)
②
Connector(L)
SCREW(R)
5mm
GOLD

Fig.D7

7. Removal of Drive C.B.A.

(See Fig.D8)

(1).Remove.......2 Screws(S)

(2).Connector....Connector(M)and (N).

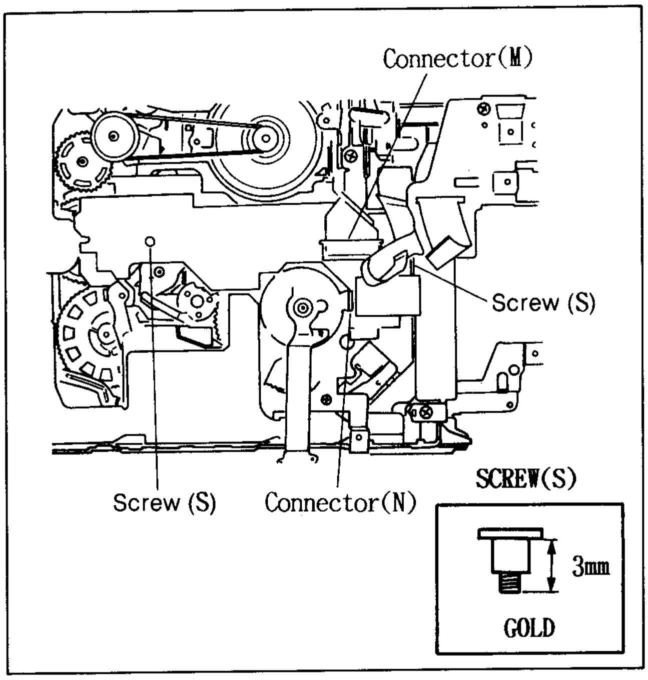

Connector(M)
Screw (S)
Screw (S)
Connector(N)
SCREW(S)
3mm
GOLD

Fig.D8

8. Removal of Audio C.B.A.

(See Fig.D9)

(1).Remove.......2 Screws(T)

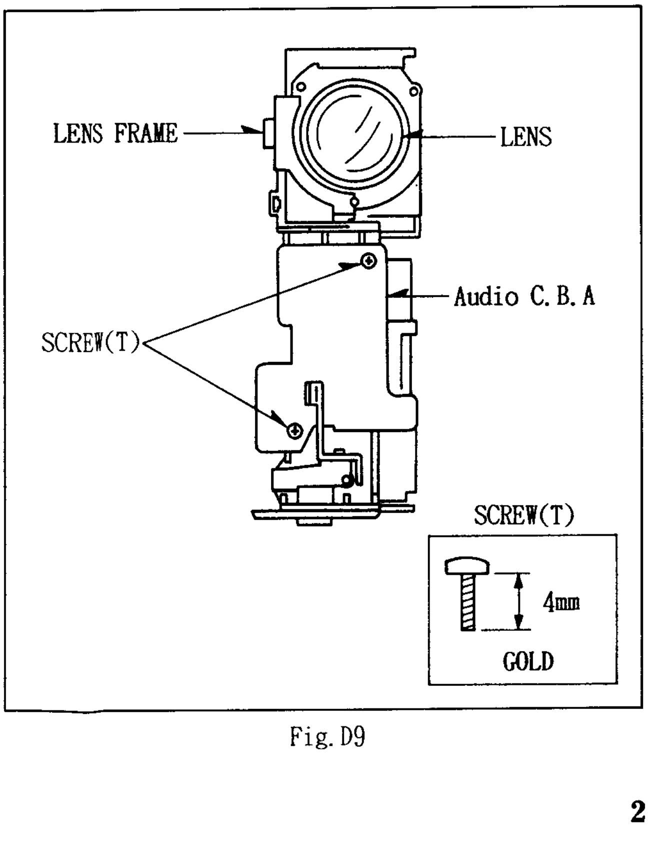

LENS FRAME
LENS
Audio C.B.A
SCREW(T)
SCREW(T)
4mm
GOLD

Fig.D9

9. Removal of lens Unit.

(See Fig.D10)

(1).Remove....... Screw(U) and Screw(V).

Note:

Be careful that you do not break the Flexible cards.

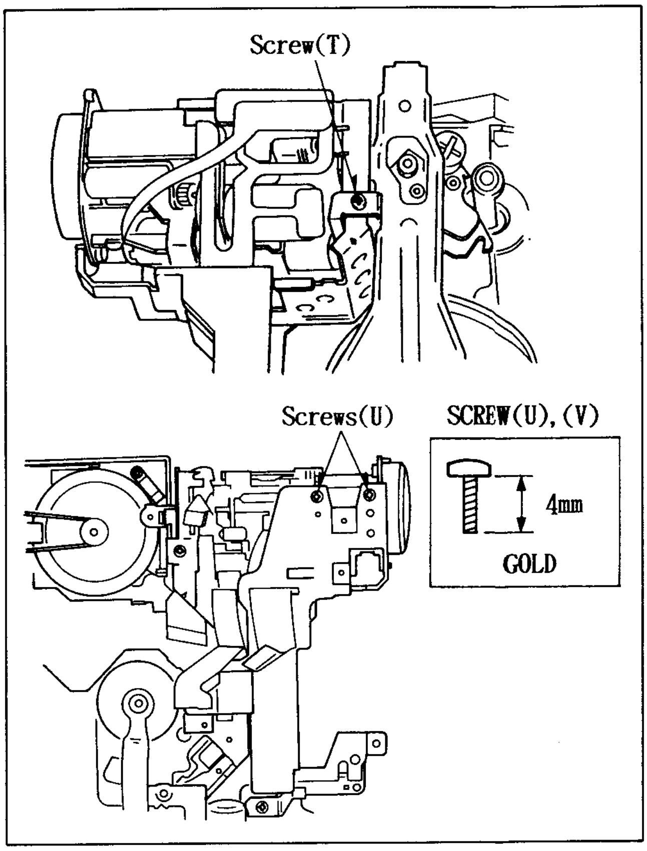

Screw(T)
Screws(U)
SCREW(U),(V)
4mm
GOLD

Fig.D10

2-2. DISASSEMBLY PROCEDURES OF LENS UNIT

The following flowchart describes order or steps for removing the Lens Units and certain printed circuit boards in order to make access to the item needing service.

To reassemble the unit follow the steps in reverse order.

1. CCD Unit	Ref-No.402
2. CCD Cushion & Crystal Filter	Ref-No.401/402
3. Lens Flexible card C.B.A	Ref-No.417
4. Zoom Encorder C.B.A	Ref-No.405
5. Zoom Motor Unit	Ref-No.407
6. Focus Motor Unit	Ref-No.408
7. Crystal Mount Plate	Ref-No.406
8. 4Th Moving Frame Unit	Ref-No.414
9. Focus Guide Pole	Ref-No.410
10. 3Rd Frame Lens Unit	Ref-No.416
11. Iris Unit	Ref-No.411
12. Screw Shaft Unit	Ref-No.413
13. 2nd Moving Frame Unit	Ref-No.412
14. Zoom Guide Pole	Ref-No.409

Note: Each Ref-numbers are equivalant to number on Fig L2 and Parts-List.

Fig. L1

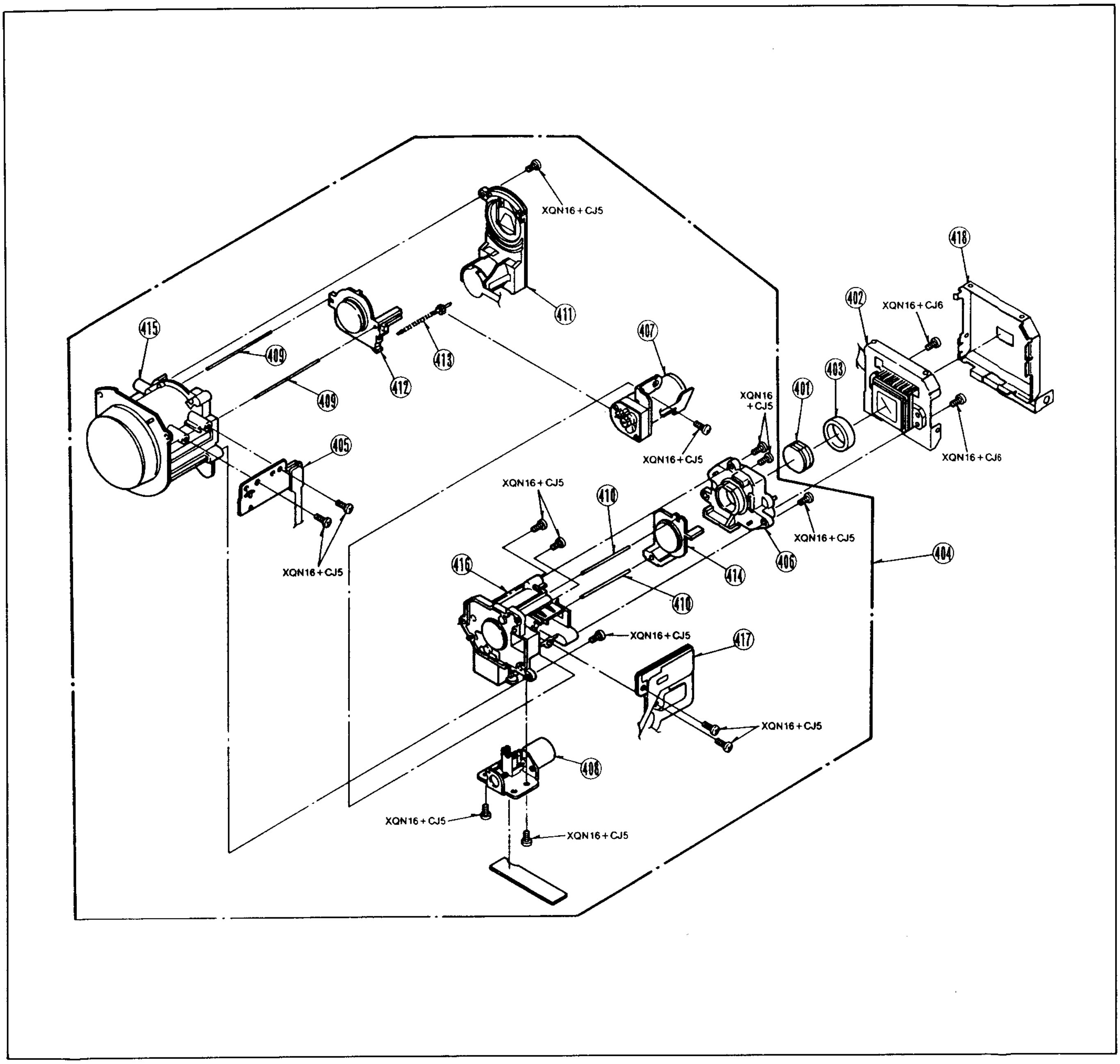

XQN16+CJ5
XQN16+CJ6
XQN16
+CJ5
XQN16+CJ5
XQN16+CJ6
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5
XQN16+CJ5

Fig. L2

2-3. DISASSEMBLY PROCEDURES OF MECHANISM

1. Removal of Cassette Holder Unit.

(1) Unsolder following flexible connectors on the bottom side.

(1) FLEXIBLE CONNECTOR TO SUPPLY PHOTO TR.
(2) FLEXIBLE CONNECTOR TO TAKE UP PHOTO TR.
(3) FLEXIBLE CONNECTOR TO LOADING MOTOR.
(4) FLEXIBLE CONNECTOR TO SENSOR LED.

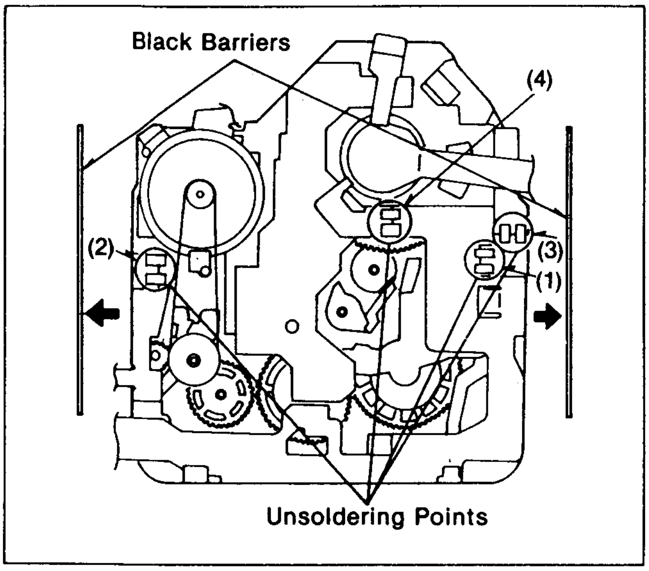

Black Barriers
(4)
(2)
(3)
(1)
Unsoldering Points

Fig. M1

(2) Remove 4 red screws indicated below.

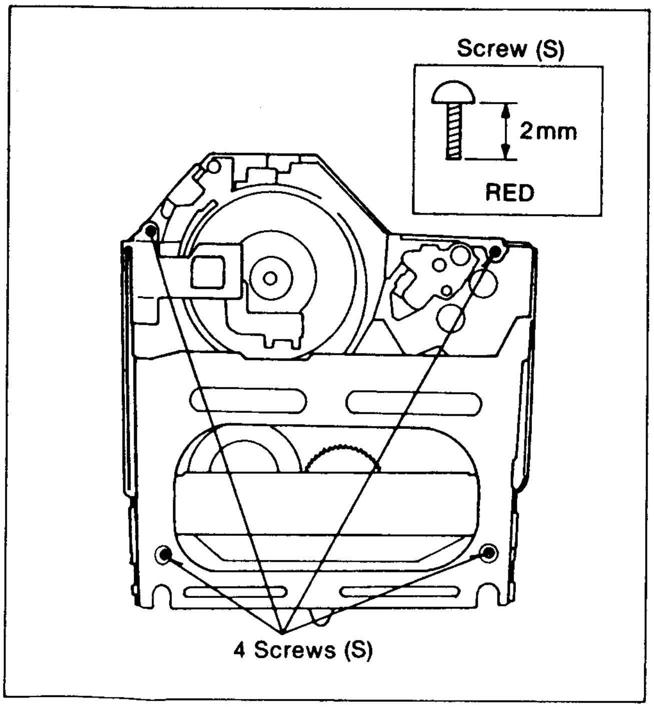

Screw (S)
2mm
RED
4 Screws (S)

Fig. M2

(3) Release Eject Lock Lever and take out Cassette Holder Unit.

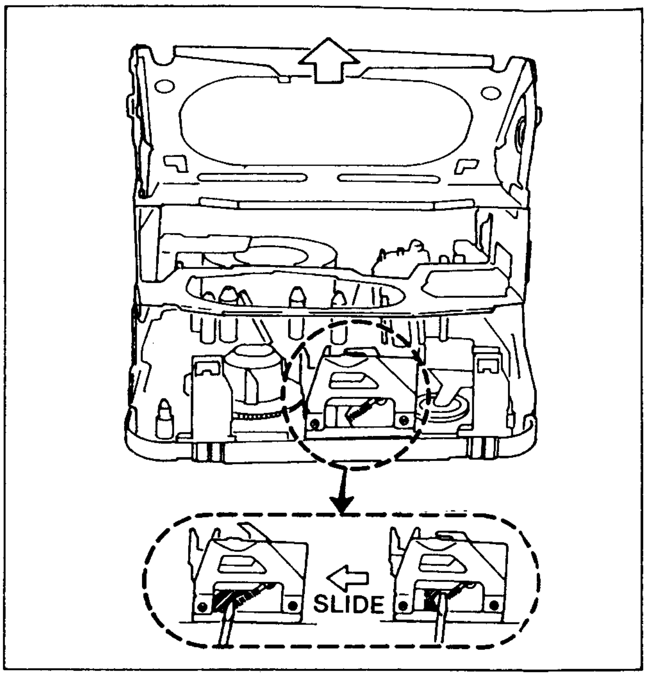


Fig. M3

2. REMOVAL OF DD CYLINDER UNIT.

Note: *
Upper Cylinder Unit is not replaceable on it's own. The DD Cylinder is only available as a unit.

(1) Remove RT (Rotary Transformer) Connector using a screw driver.
(2) Remove 3 screws to take out DD Cylinder Unit.

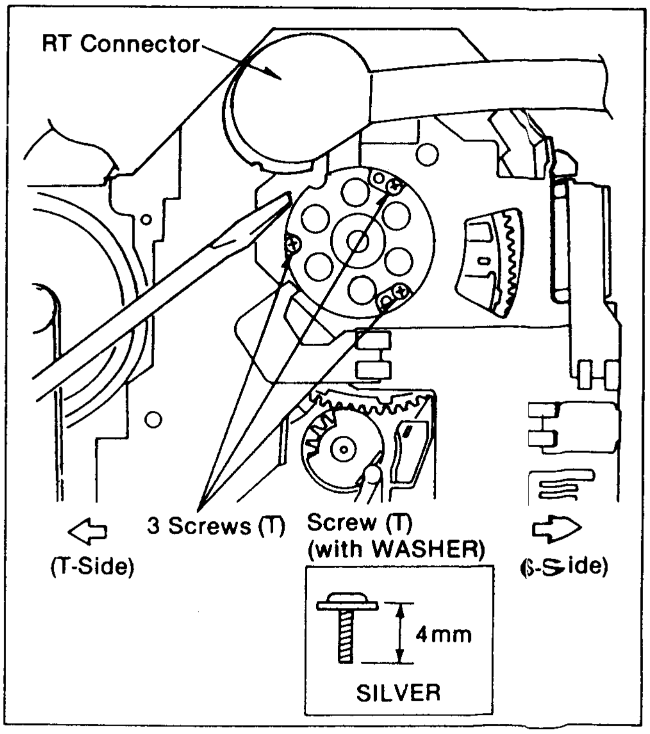

RT Connector
3 Screws (T)
Screw (T)
(with WASHER)
(T-Side)
(S-Side)
4mm
SILVER

Fig. M4

3. REMOVAL OF S-RAIL UNIT, LOADING MOTOR UNIT & TENSION REGULATOR UNIT.

(1) Move tape loading Posts(S1, T1 and T2) half way in the tape loading direction by applying 1.5DC to Loading Motor.

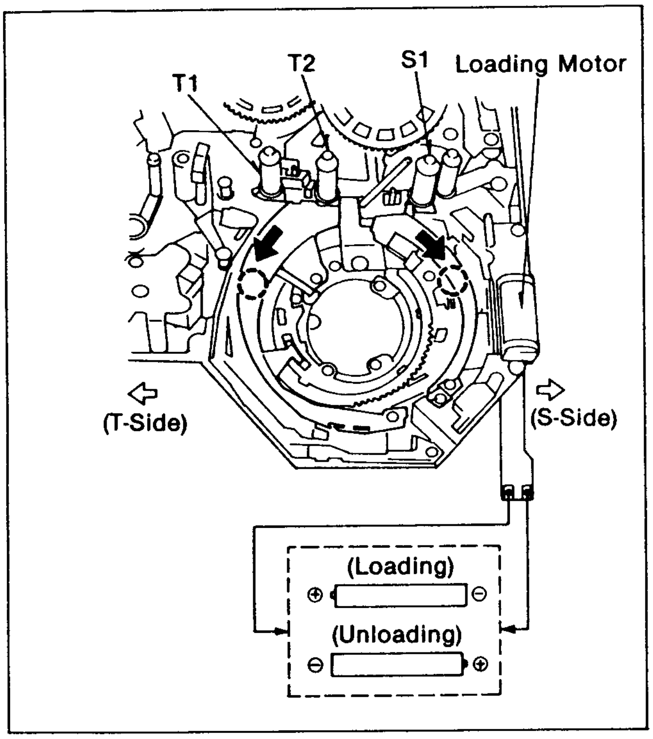

T1
T2
S1
Loading Motor
(T-Side)
(S-Side)
(Loading)
⊕
⊖
(Unloading)
⊖
⊕

Fig. M5

(2) Remove 2 screws and take out S-Rail Unit.

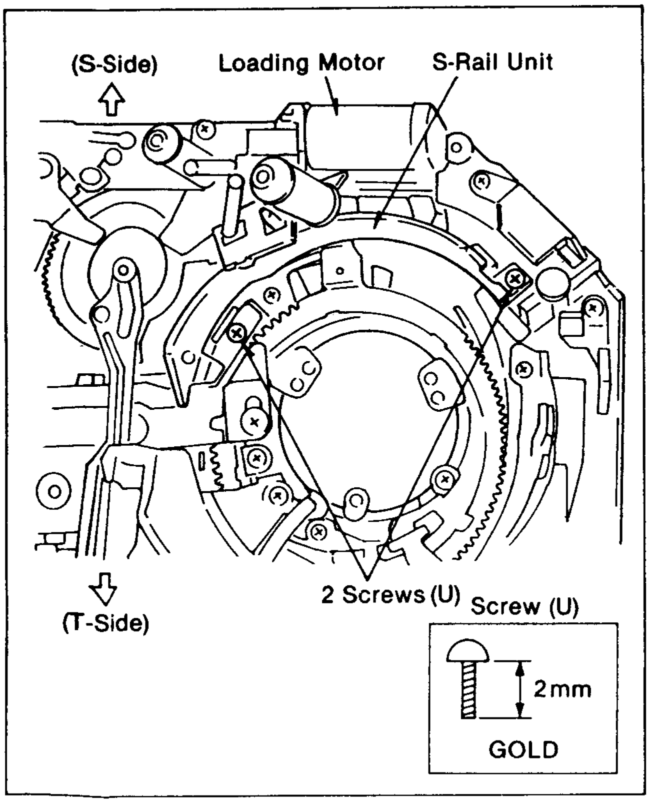

(S-Side)
Loading Motor
S-Rail Unit
(T-Side)
2 Screws (U)
Screw (U)
2mm
GOLD

Fig. M6

(3) Remove 2 screws (Slightly move Loading Posts in the unloading direction.) and take out Loading Motor Unit.

(4) Unhook the spring (* Remember the originai hooking position for reinstallation later), remove a washer and take out Tension Regulator Unit.
Don't lose a spacer underneath.

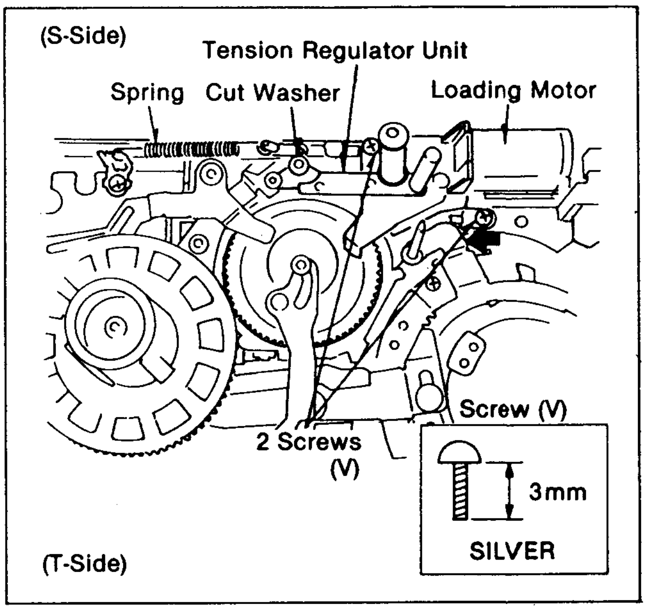

(S-Side)
Tension Regulator Unit
Spring
Cut Washer
Loading Motor
Screw (V)
2 Screws (V)
3mm
SILVER
(T-Side)

Fig. M7

4. REMOVAL OF SUPPLY REEL TABLE, EJECT LEVER UNIT AND PAD ARM.

(1) Remove a washer and take out Supply Reel Table. Don't lose a spacer underneath.

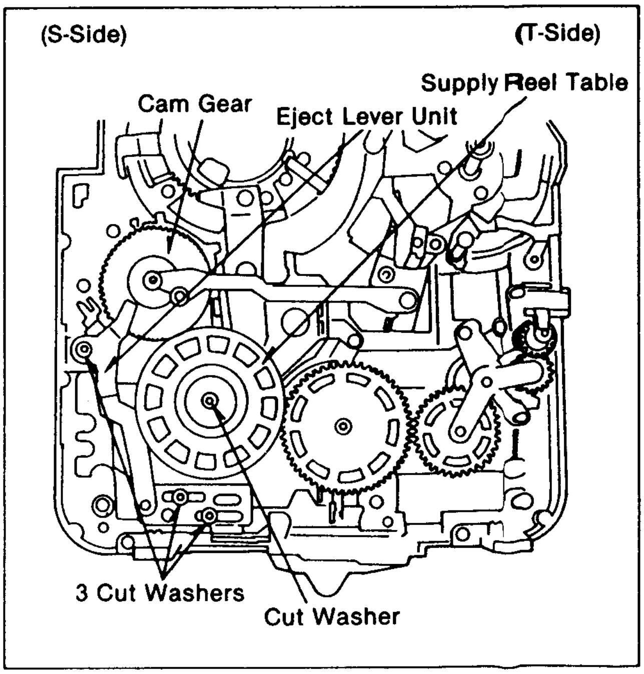

(S-Side)
(T-Side)
Supply Reel Table
Cam Gear
Eject Lever Unit
3 Cut Washers
Cut Washer

Fig. M8

(2) Remove 3 washers, 2 screws on Eject Lock Base to make clearance (* Eject Lock Base is soldered on the flexible P.C. Board.) to take out Eject Lock Lever.

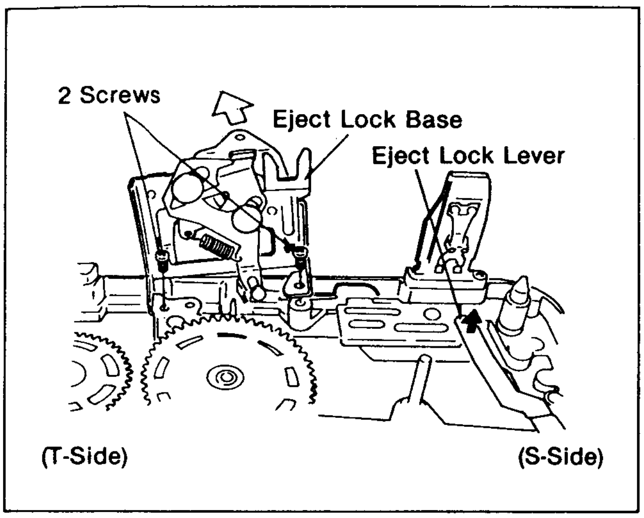

2 Screws
Eject Lock Base
Eject Lock Lever
(T-Side)
(S-Side)

Fig. M9

(3) Remove 2 washers, pull Pinch Drive Arm to the left (S–side) and take it out.

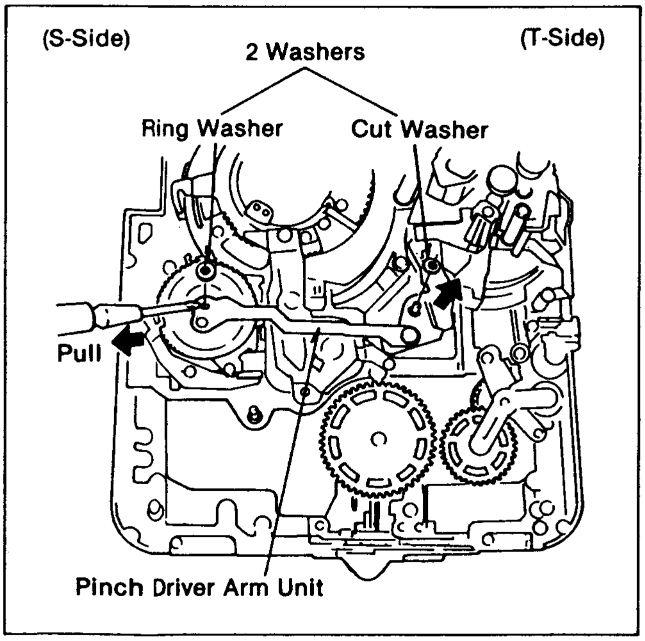

(S-Side)
2 Washers
(T-Side)
Ring Washer
Cut Washer
Pull
Pinch Driver Arm Unit

Fig. M10

(4) Remove a washer and take out Pad Arm.

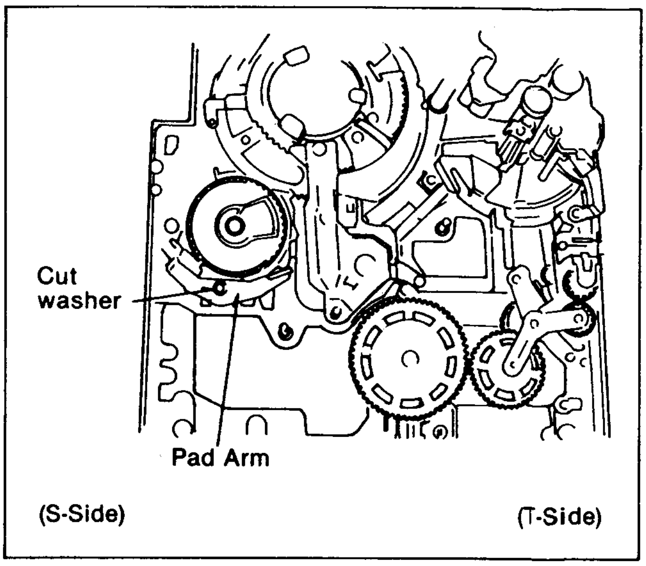

Cut washer
Pad Arm
(S-Side)
(T-Side)

Fig. M11

5. REMOVAL OF T–RAIL UNIT, SWING ARM UNIT, LOADING UNIT AND MODE SW UNIT

(1) Remove 2 screws and take out T–Rail Unit. (* Flexible Connector of Sensor LED has to be unsoldered on the bottom side.)

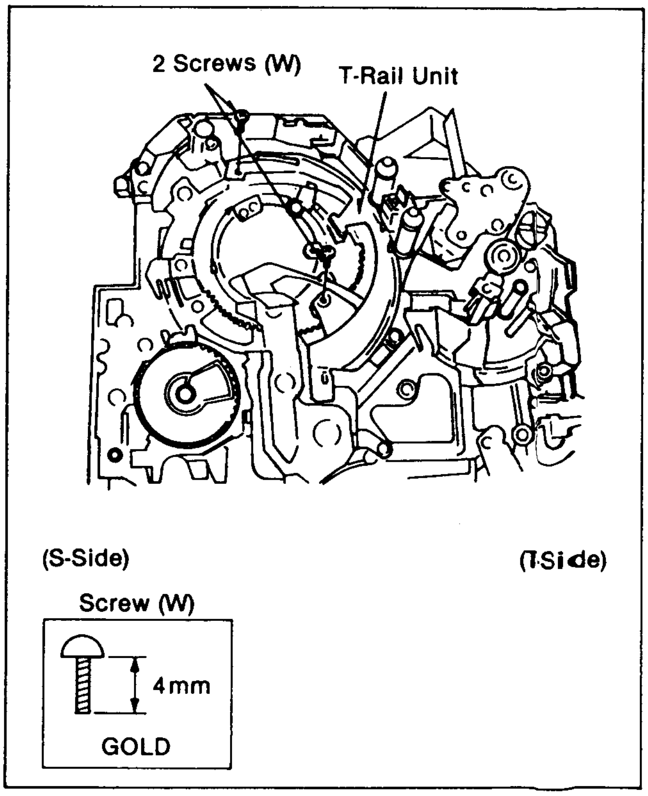

2 Screws (W)
T-Rail Unit
(S-Side)
(T-Side)
Screw (W)
4mm
GOLD

Fig. M12

Caution:
Do not touch inside cam Gear and keep the cam Gear away from grease and dusts.

(2) Remove 2 screws, take out Holder Angle and Swing Arm Unit.

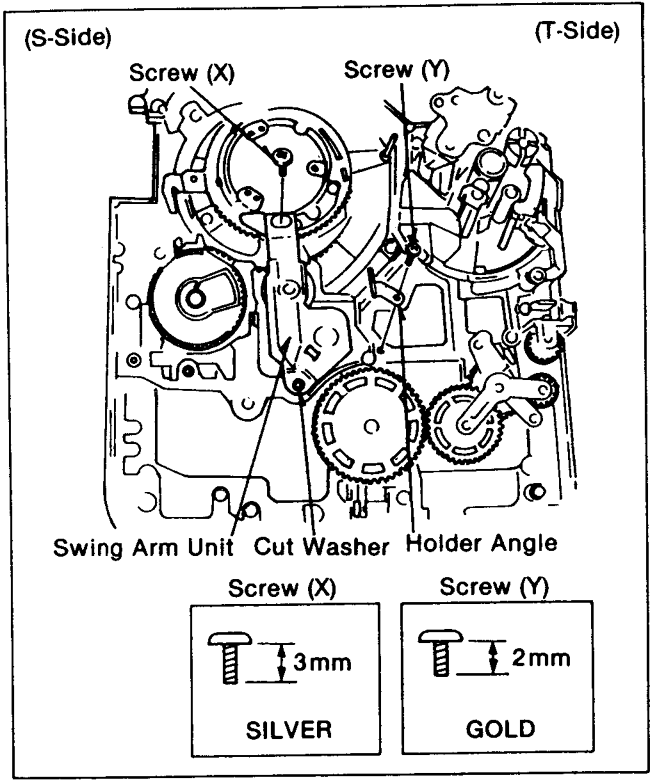

(S-Side)
(T-Side)
Screw (X)
Screw (Y)
Swing Arm Unit
Cut Washer
Holder Angle
Screw (X)
3mm
SILVER
Screw (Y)
2mm
GOLD

Fig. M13

(3) Remove 5 screws.

(4) Loosen Screw (a) to make a clearance and take out Loading Unit.

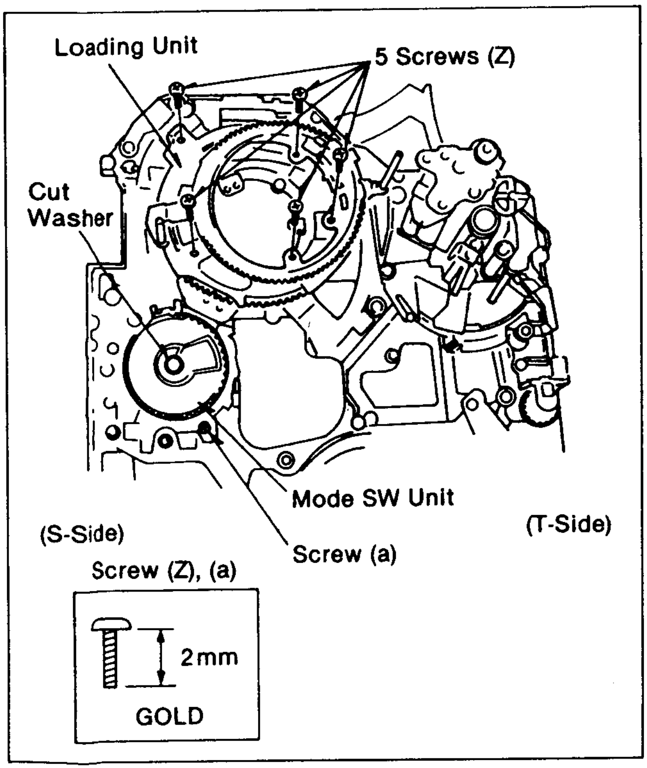

Loading Unit
5 Screws (Z)
Cut Washer
Mode SW Unit
(S-Side)
(T-Side)
Screw (a)
Screw (Z), (a)
2mm
GOLD

Fig. M14

(5) Remove screw (a) and cut washer to take out mode SW unit. (※Mode SW Base is soldered on the flexible P.C. Board).

2-4. ASSEMBLY AND PHASE ADJUSTMENT PROCEDURES OF MECHANISM

1. ASSEMBLY AND PHASE ADJUSTMENT OF LOADING UNIT.

   (1) Install Loading Unit and tighten 5 screws.
   (2) Adjust mechanical phase so that phase marks (See-through holes) meet on both supply and take up sides as shown below.

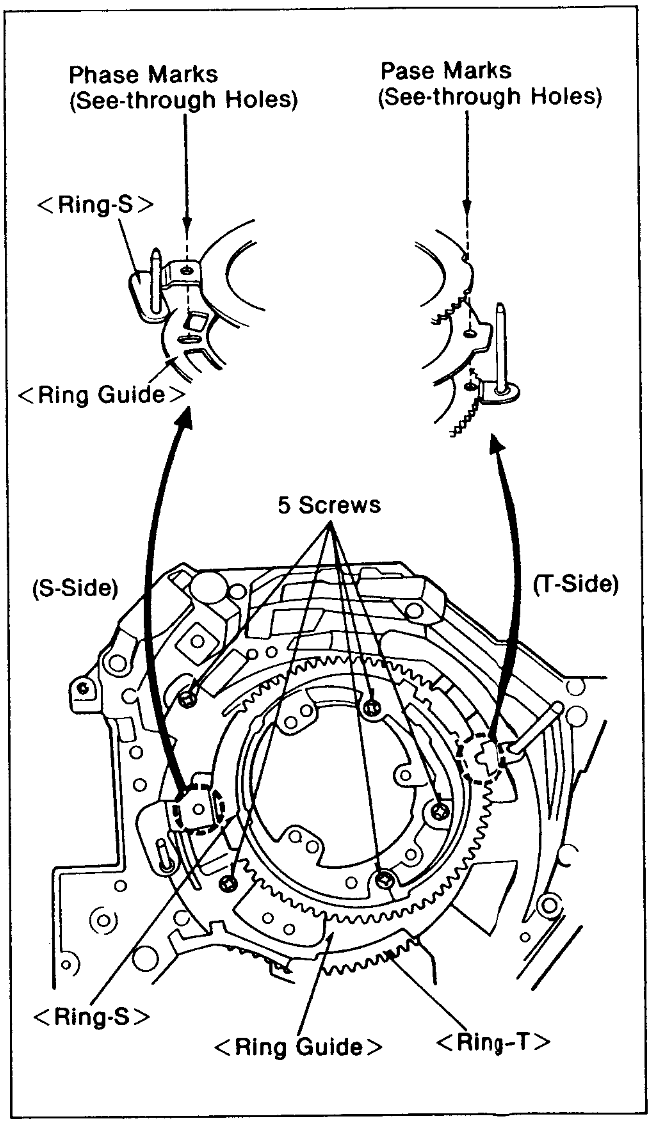

Phase Marks (See-through Holes)
Pase Marks (See-through Holes)
<Ring-S>
<Ring Guide>
5 Screws
(S-Side)
(T-Side)
<Ring-S>
<Ring Guide>
<Ring-T>

Fig. M15

2. ASSEMBLY AND PHASE ADJUSTMENT OF CAM GEAR.

   (1) Install Cam Gear so that uneven cog portion meets the phase mark on the chassis and put the washer.

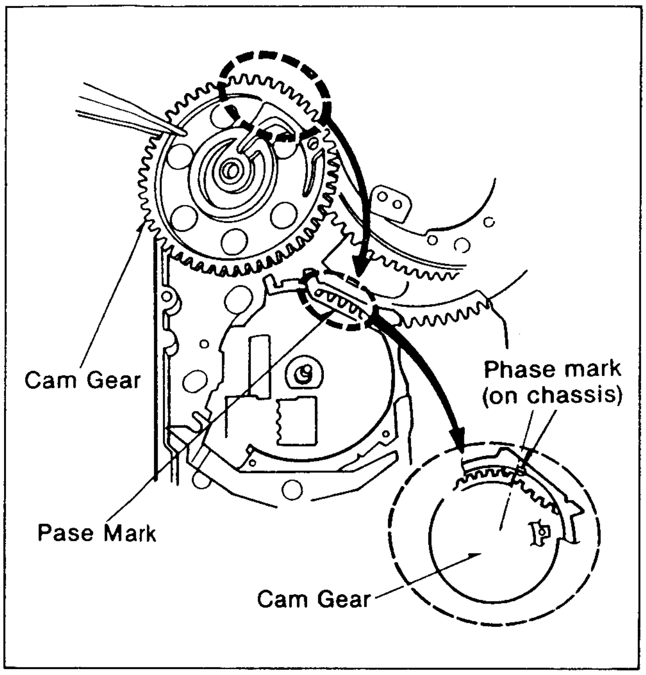

Cam Gear
Phase mark
(on chassis)
Pase Mark
Cam Gear

Fig. M16

3. ASSEMBLY OF PENDULUM ARM UNIT

(1) Install Swing Arm Unit and tighten 2 screws with the holder angle.
(2) Confirm that the phase mark on Loading Ring−T can be seen through the square cutout of Swing Arm Unit. The phase mark of Swing Arm Unit (V− cutout) aligns with the phase mark on Loading Ring−S Unit on the bottom side. There phase marks should be in the correct positions, if the previous phase adjustments have been done correctly.

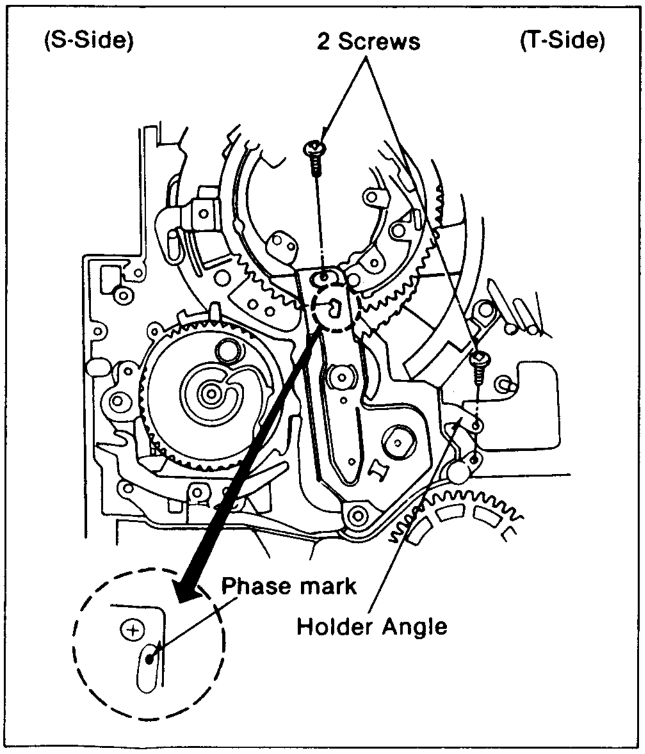

(S-Side)
2 Screws
(T-Side)
Phase mark
Holder Angle

Fig. M17

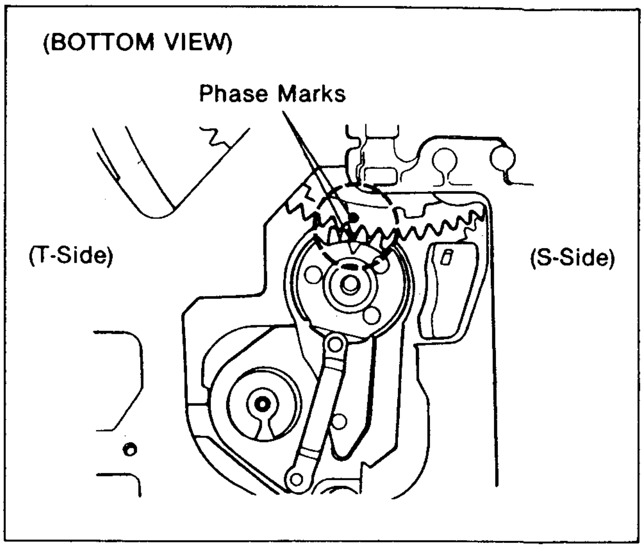

(BOTTOM VIEW)
Phase Marks
(T-Side)
(S-Side)

Fig. M18

4. ASSEMBLY OF LOADING UNIT PINCH DRIVE ARM UNIT AND CONFIRMATION OF MECHANICAL MOVEMENT

(1) Install Loading Motor Unit and tighten one screw. (one more screw has to be tightened after installing Pinch Drive Arm Unit)

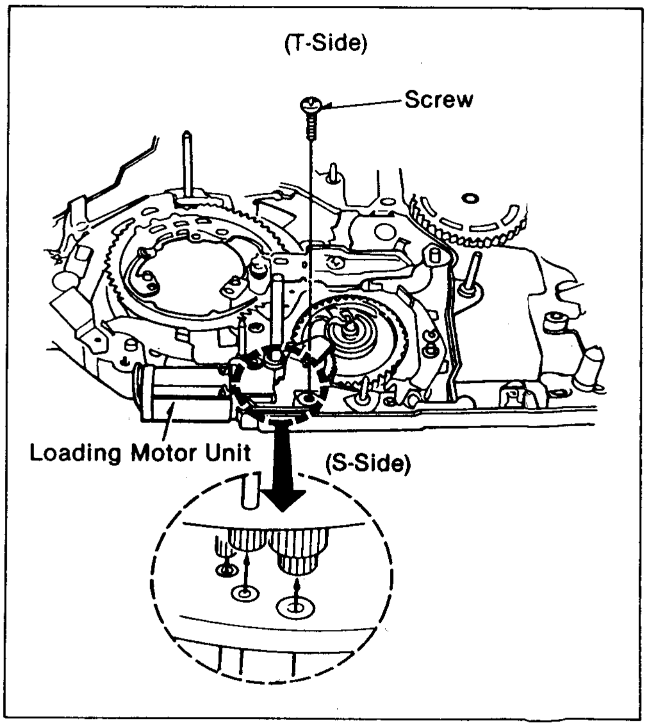

(T-Side)
Screw
Loading Motor Unit
(S-Side)

Fig. M19

(2) Install Pinch Drive Arm Unit and put on washer (A).

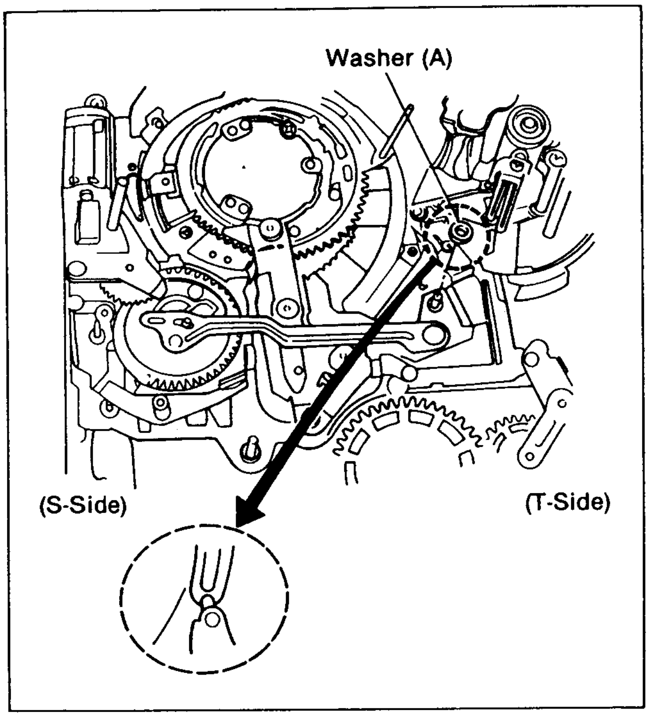

Washer (A)
(S-Side)
(T-Side)

Fig. M20

(3) Move Pinch Roller to the unloading position by finger and put on washer (B).

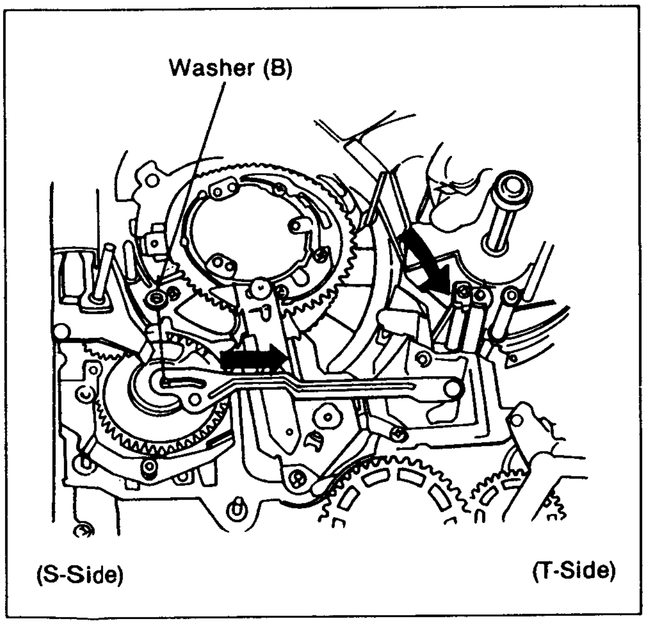

Washer (B)
(S-Side)
(T-Side)

Fig. M21

(4) Slightly move Loading Ring–S in the unloading direction by applying 1.5VDC to Loading Motor and tighten the screw.

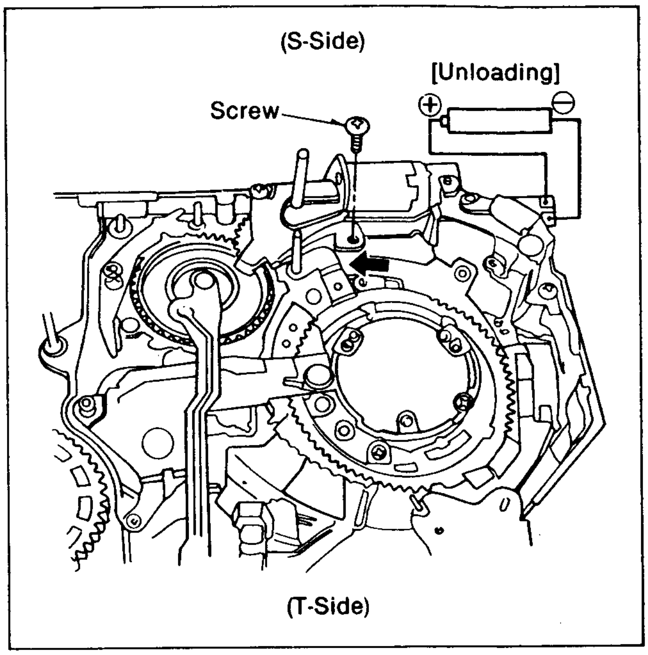

(S-Side)
[Unloading]
⊕
⊖
Screw
(T-Side)

Fig. M22

(5) Confirmation of Mechanical Movement and phase. In this condition, check that the mechanism smoothly moves in both loading and unloading directions by changing the polarity of the battery.
After that, move the mechanism back to the phase adjustment position and confirm all phase marks come to the correct position.

5. ASSEMBLY OF S–RAIL UNIT AND T–RAIL UNIT

(1) Install S–Rail Unit passing Link Post of Ring–S through the linking hole of the S–Rail Unit, and tighten 2 screws.

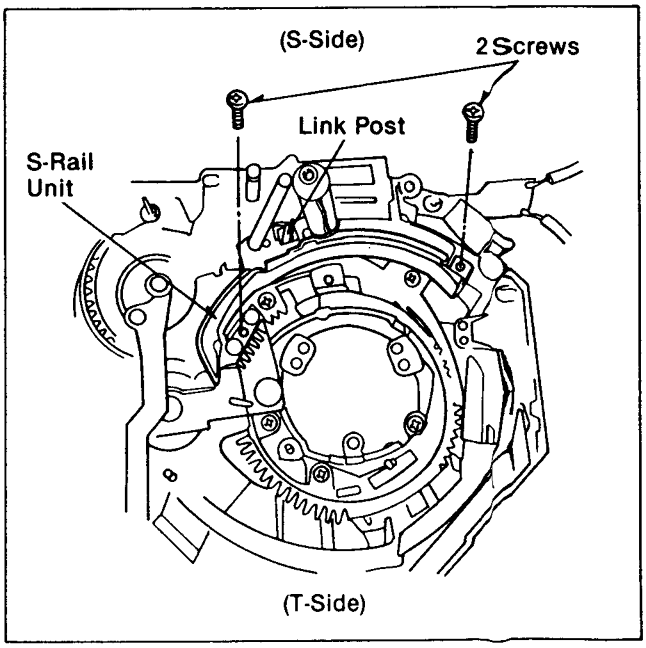

(S-Side)
2 Screws
Link Post
S-Rail Unit
(T-Side)

Fig. M23

(2) Install T–Rail Unit the same way and tighten 2 screws.
(3) Solder the flexible connector of Sensor LED on the bottom side.

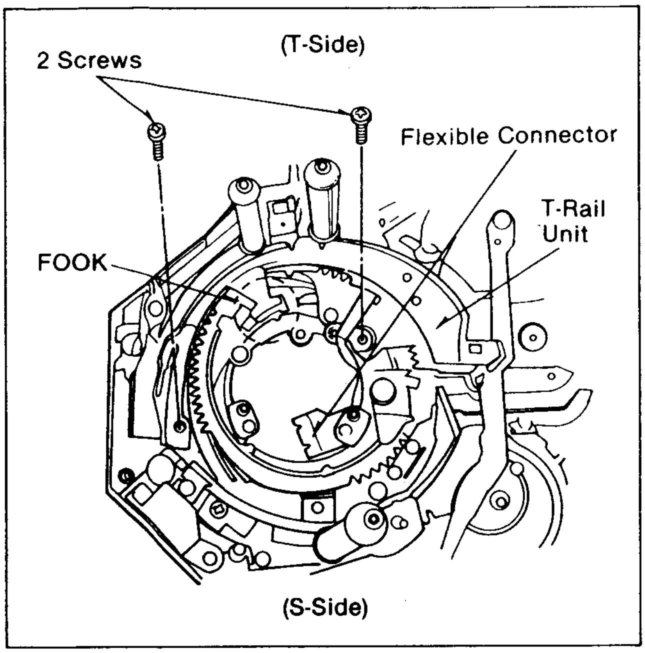

(T-Side)
2 Screws
Flexible Connector
T-Rail Unit
FOOK
(S-Side)

Fig. M24

6. ASSEMBLY OF EJECT LEVER UNIT

(1) Install Eject Lever Unit and link the arm with Eject Lock Base.
(2) Fix Eject Lock Base with 2 screws and Eject Lever Unit with 3 washers.

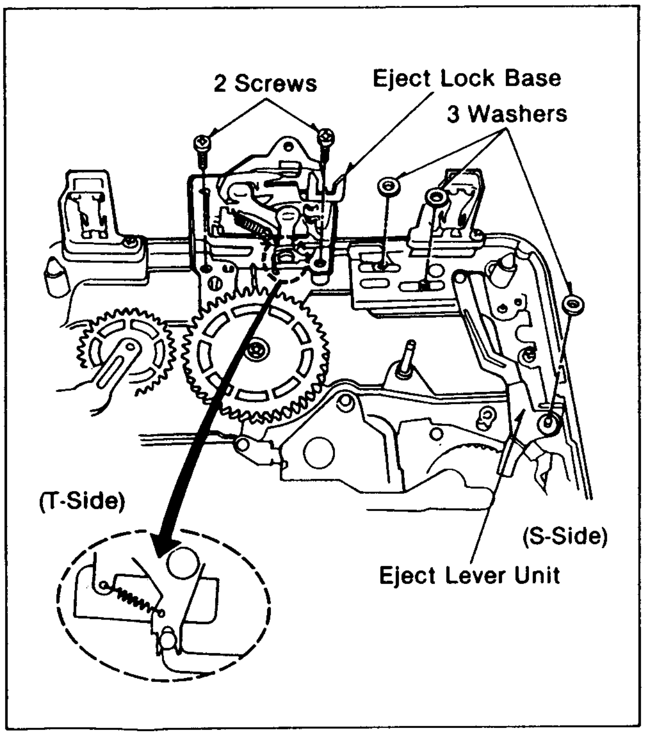

2 Screws
Eject Lock Base
3 Washers
(T-Side)
(S-Side)
Eject Lever Unit

Fig. M25

7. ASSEMBLY OF TENSION REGULATOR UNIT.

(1) Install Tension Regulator Unit so that the guide arm fits in outer inside of Cam Gear.
(2) Put on washer and hook Tension Spring in the original position.

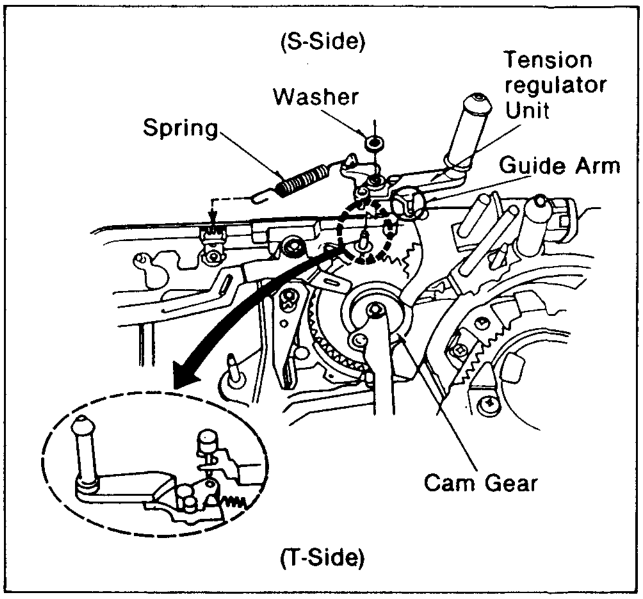

(S-Side)
Tension regulator Unit
Washer
Spring
Guide Arm
Cam Gear
(T-Side)

Fig. M26

8. ASSEMBLY OF SUPPLY REEL TABLE

(1) Install Supply Reel Table and put on the washer.

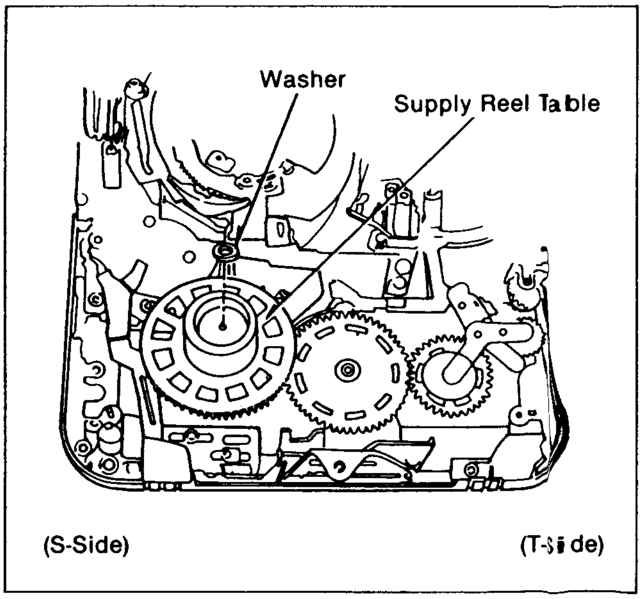

Washer
Supply Reel Table
(S-Side)
(T-Side)

Fig. M27

9. ASSEMBLY OF DD CYLINDER UNIT

(1) Install DD Cylinder unit so that the fixating pins fit into the fixing holes, and tighten 3 screws from the bottom side.

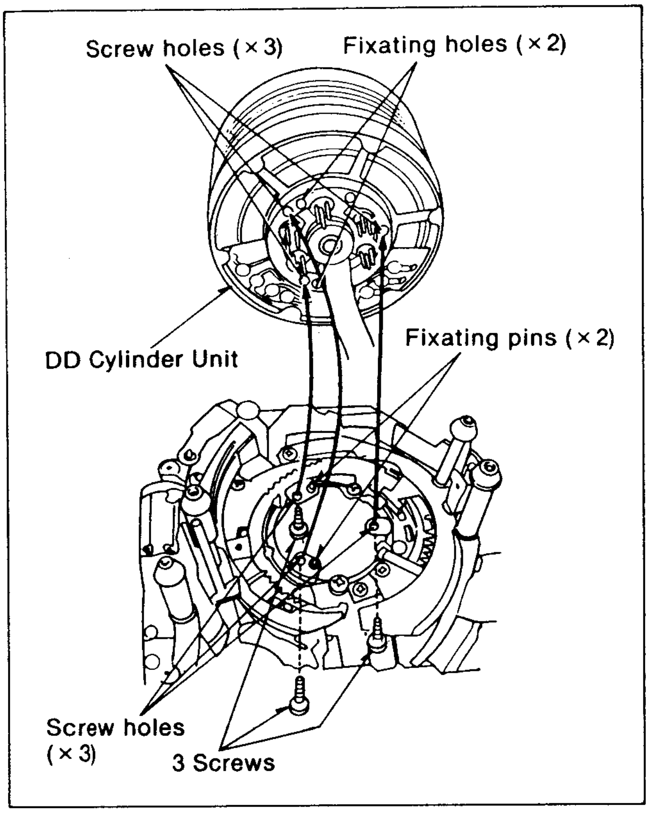

Screw holes (× 3)
Fixating holes (× 2)
DD Cylinder Unit
Fixating pins (× 2)
Screw holes
(× 3)
3 Screws

Fig. M28

10. ASSEMBLY OF RT CONNECTOR

(1) Hold RT Connector aligning the phase mark of RT Connector (as indicated) to the phase mark on the chassis.

(2) Carefully Install the RT Connector passing lead pins of DD Cylinder Unit through each corresponding hole of the RT Connector.

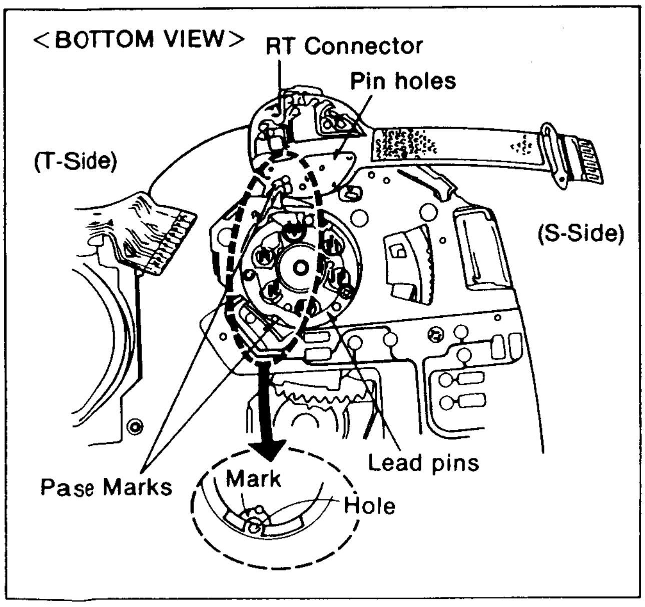

<BOTTOM VIEW>
RT Connector
Pin holes
(T-Side)
(S-Side)
Lead pins
Pase Marks
Mark
Hole

Fig. M29

11. ASSEMBLY OF CASSETTE HOLDER UNIT.

(1) Install Cassette Holder Unit and tighten 4 red screws.

(2) Solder flexible connectors of Supply Photo Sensor, Take up Photo Sensor and Loading Motor Unit on the bottom side.

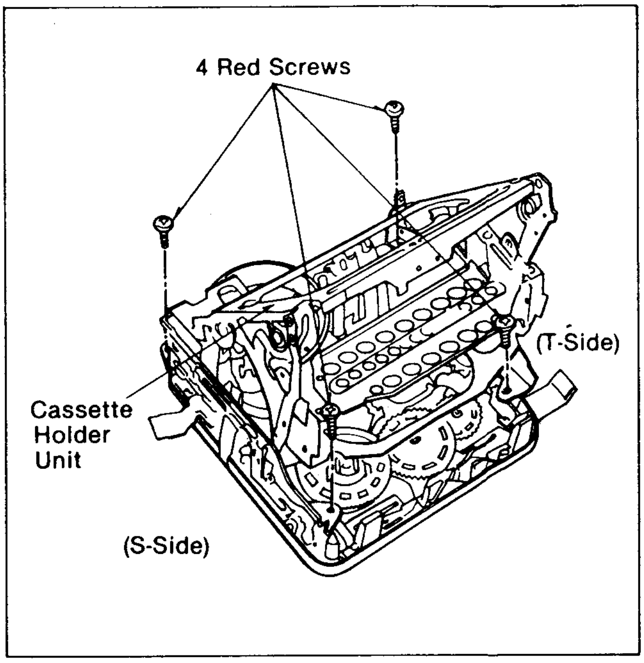

4 Red Screws
(T-Side)
Cassette
Holder
Unit
(S-Side)

Fig. M30

2-5. INTERCHANGEABILITY ADJUSTMENT

1. BACK TENSION ADJUSTMENT

* Equipment Required
Tension Meter
VHS−C Cassette Tape
Specification 18+3/−1.5g(16.5g∼21g)

(1) Play back (remove the cassette tape cover) tape.
(2) Set Tension Meter at the measuring point and read the value.
(3) If the value is out of specification, change the hooking position of Tension Spring.
(4) Install Cassette Holder Unit.

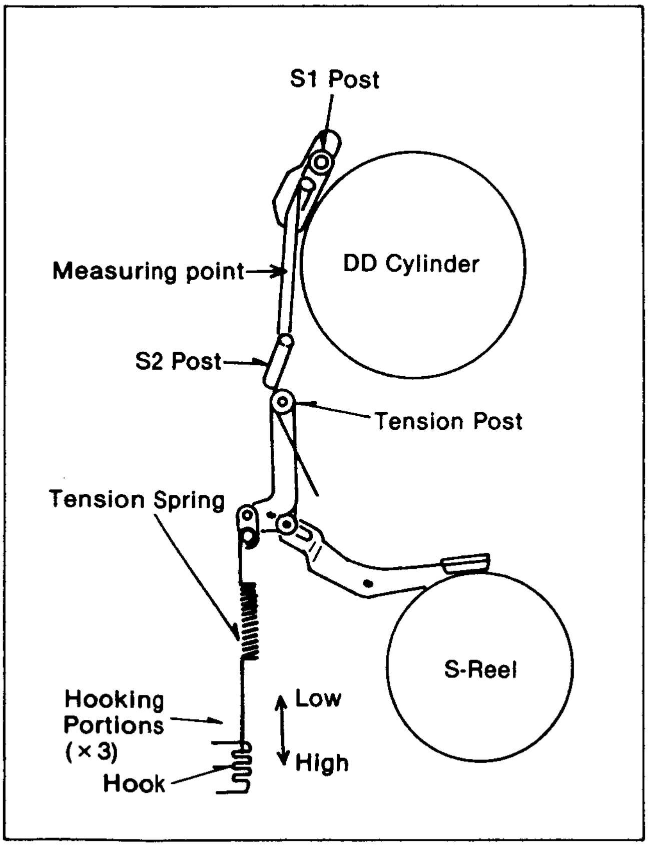

S1 Post
Measuring point
DD Cylinder
S2 Post
Tension Post
Tension Spring
S-Reel
Hooking Portions (×3)
Hook
Low
High

Fig. M31

2. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS AND A/C HEAD (PRELIMINARY ADJUSTMENT)

Confirmation of Tape Travel
(1) Playback a cassette tape (remove the cassette tape cover) and check that the tape travels without curling at upper and lower guides on posts S1, T1, T2 and T3.

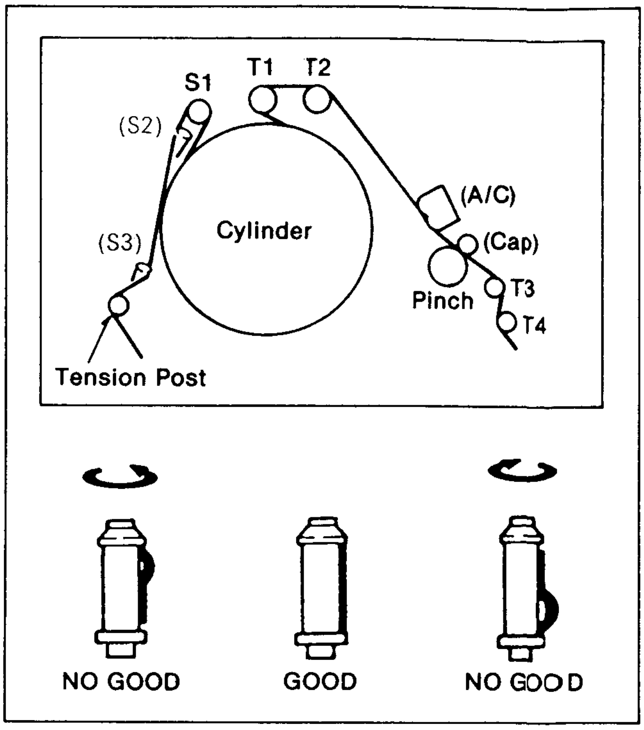

S1
T1
T2
(S2)
(A/C)
(Cap)
Cylinder
(S3)
Pinch
T3
T4
Tension Post
NO GOOD
GOOD
NO GOOD

Fig. M32

(2) If curling is apparent, adjust the height of posts by turning the top of post with a Hex Wrench.
(3) Looking at the lower edge of the Control Head with the tape in motion, ensure that lower edge of Control Head. If it doesn't turn the A/C Head height Adjustment Nut slightly in the direction necessary to correct it.

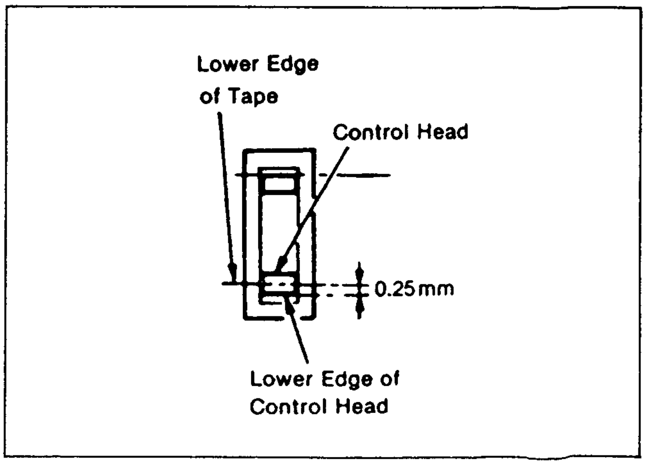

Lower Edge of Tape
Control Head
0.25mm
Lower Edge of Control Head

Fig. M33

3. TAPE INTERCHANEABILITY ADJUSTMENT

NOTE:
To perform these adjustments, make sure that the tracking control is set in the fixed position by Pressing both tracking Up/Down switches at the same time.

* Equipment Required
Dual Trace Oscilloscope
Alignment tape (VFM8180HUPF)

[AZIMUTH ADJUSTMENT OF A/C HEAD]

(1) Connect the oscilloscope to Audio Line Output.
(2) Play back the Monoscope portion (6KHZ,MONO) of the Alignment tape.
(3) Adjust the Azimuth Adjustment screw on the A/C Head Unit so that output level is at a maximum.

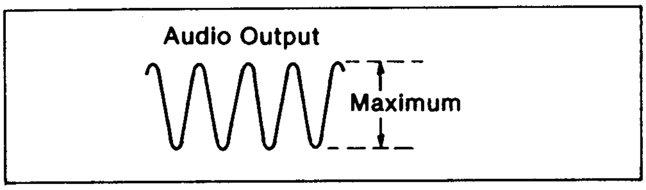

Audio Output
Maximum

Fig. M34

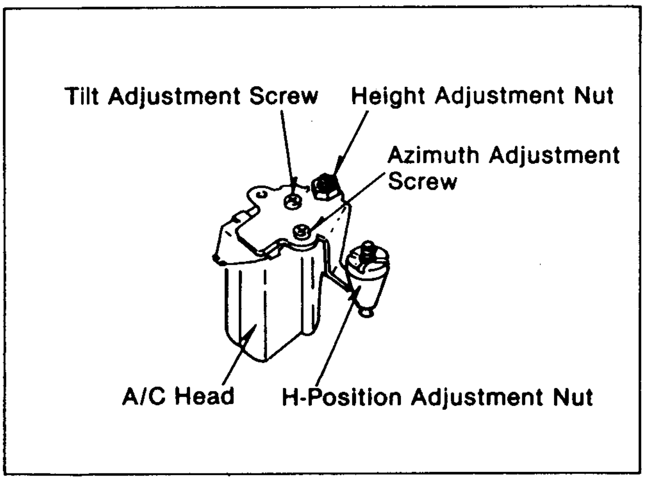

Tilt Adjustment Screw
Height Adjustment Nut
Azimuth Adjustment Screw
A/C Head
H-Position Adjustment Nut

Fig. M35

[CONFIRMATION/ADJUSTMENT OF ENVELOPE]

(1) Connect the oscilloscope to CL3004. (refer to Fig. M40)
(2) Play back the Monoscope portion of the Alignment Tape and adjust the height of S1 and T1 posts watching the scope display so that the RF envelope becomes as flat as possible.
(3) When the RF envelope has a Gap at the beginning of the track, adjust height of S1 post.

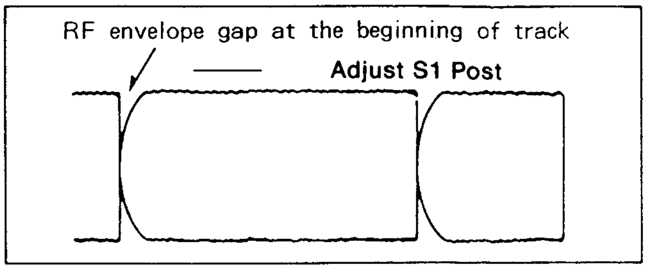

RF envelope gap at the beginning of track
Adjust S1 Post

Fig. M36

(4) When the RF envelope has a gap at the end of the track, adjust height of T1 post.

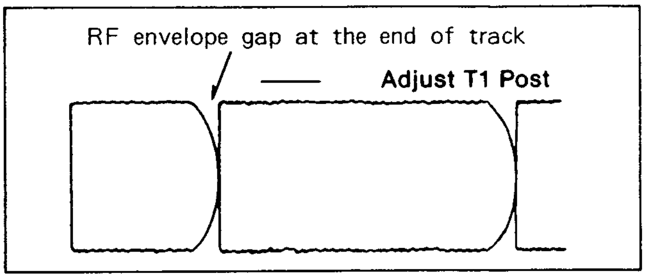

RF envelope gap at the end of track
Adjust T1 Post

Fig. M37

(5) When S2 and T1 Posts are adjusted properly, there is no gap of the RF Envelope at the beginning or end of the track as shown below.

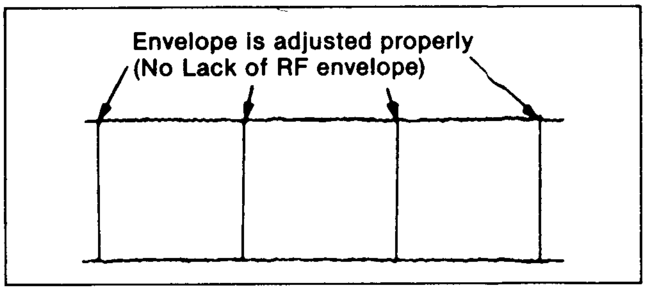

Envelope is adjusted properly
(No Lack of RF envelope)

Fig. M38

[HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD]

(1) Set the tracking control to the fixed position by pressing both tracking control UP/DOWN switches at the same time, and connect the Oscilloscope to TP8001.
(2) Playback the monoscope portion of the alignment tape.
(3) Adjustment horizontal position by turning H–Position Adjustment Nut so that the envelope level is at a maximum.

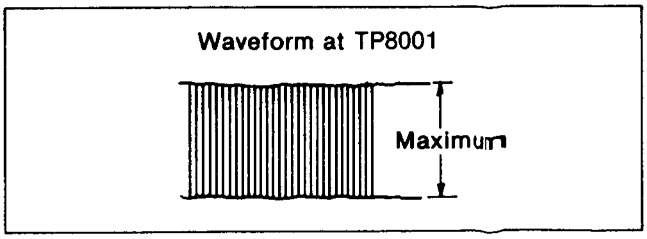

Waveform at TP8001
Maximum

Fig. M39

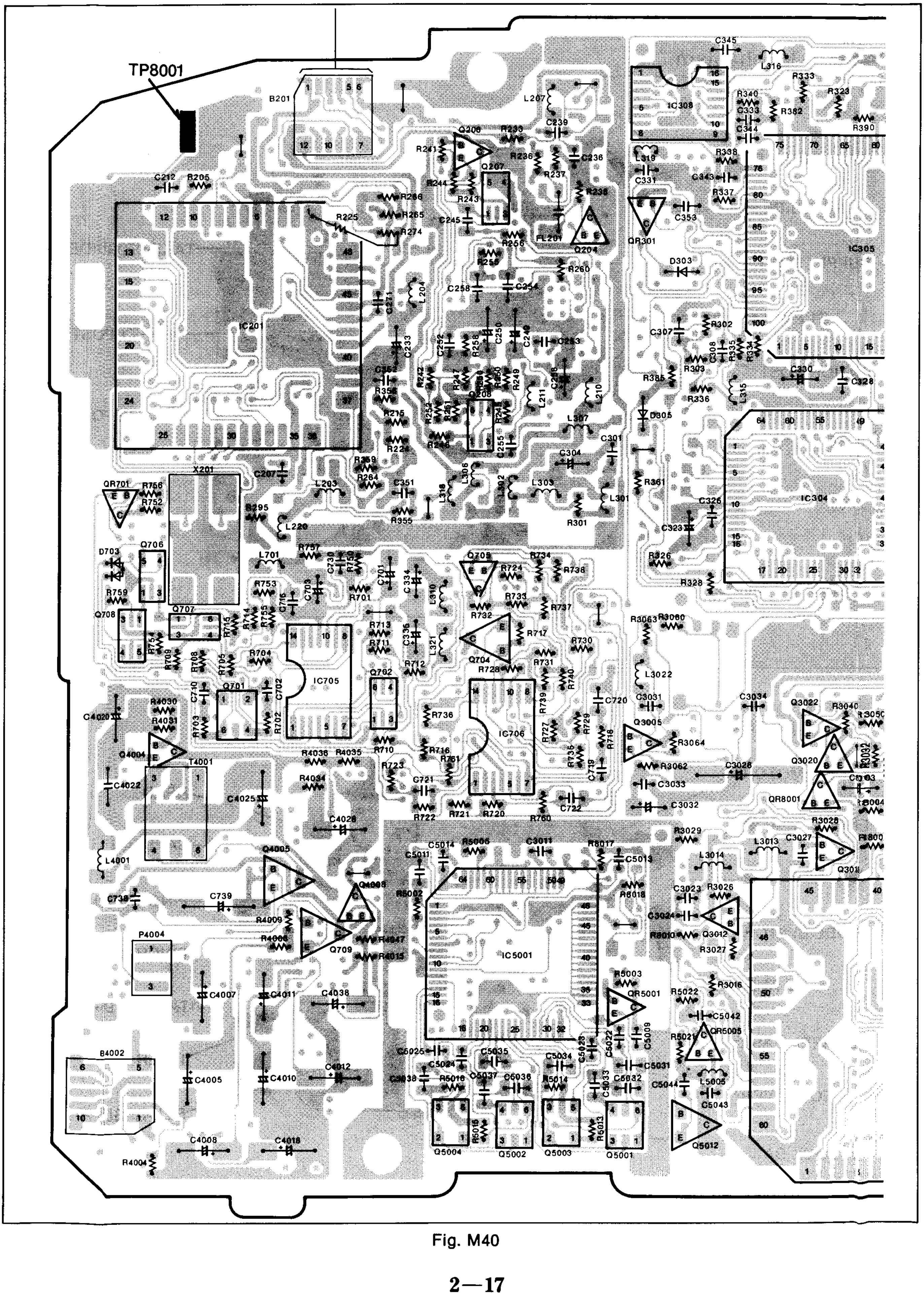
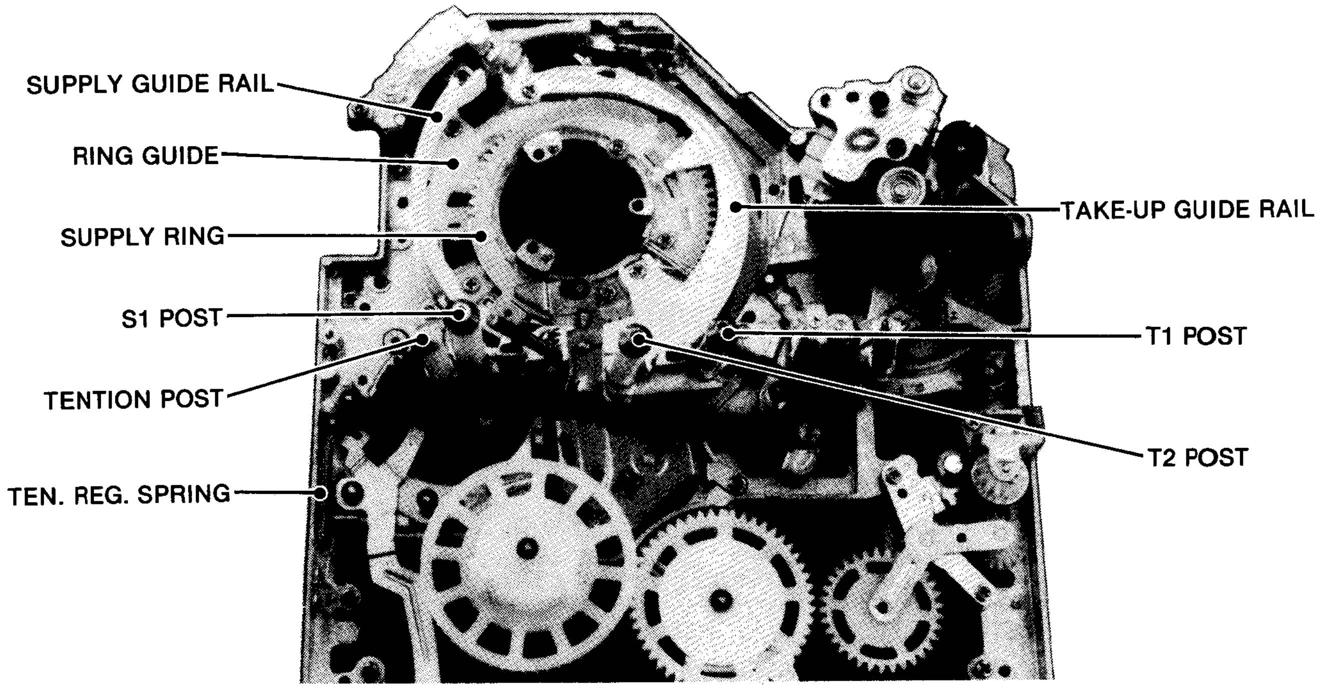

TP8001
B201
IC201
IC308
IC305
IC304
IC705
IC706
IC5001
X201
T4001
P4004
B4002
QR701
Q706
Q707
Q708
Q701
Q702
Q704
Q705
Q206
Q207
Q204
Q208
QR301
Q3005
Q3022
Q3020
QR8001
Q3012
Q4004
Q4005
Q4008
Q709
QR5001
QR5005
Q5004
Q5002
Q5003
Q5001
Q5012
FL201
D703
D303
D305
L207
L204
L203
L220
L701
L211
L210
L307
L306
L318
L302
L303
L301
L310
L321
L316
L319
L315
L3022
L3013
L3014
L4001
L5005
C212
R205
R225
R266
R265
R274
C345
R333
R323
R340
C333
R382
R390
C344
R338
C343
C331
R337
C353
R241
R233
R236
R237
C239
C236
R244
R243
R238
C245
R256
R259
R260
C258
C254
C211
C233
C252
R258
C250
C249
C253
C307
R302
R303
C308
R335
R334
C330
C328
C352
R354
R242
R247
R250
R249
C248
R385
R336
R215
R252
R251
R224
R246
R253
C255
C301
C304
R359
R264
C207
C351
R355
R361
C326
R301
C323
R756
R752
R295
R757
C730
R758
C701
C334
R724
R734
R738
R753
C716
C703
R701
R733
R732
R737
R759
R714
R755
R715
R713
R711
C335
R717
R730
R3063
R3060
R754
R709
R708
R705
R704
R712
R728
R731
R740
C710
C702
R4030
R4031
C4020
R703
R702
R736
R739
C720
C3031
C3034
R3040
R3050
R722
R729
R718
R3064
R4036
R4035
R716
R761
R735
C719
R3062
C3028
R4034
R723
C721
C3033
C3032
C4022
C4025
R722
R721
R720
R760
C732
C4026
R3029
R3028
C3027
C5014
R5006
C3011
R8017
C5013
C5011
R5002
R6018
C3023
R3026
C738
C739
C3024
R4009
R4008
R4017
R4015
R8010
R3027
R5003
R5022
R3016
C4007
C4011
C4038
C5042
R5021
C5023
C5022
C5009
C5025
C5024
C5035
C5034
C5031
C4012
C4005
C4010
C3038
R5016
C5037
C5036
R5014
C5033
C5032
C5044
C5043
R5015
R6013
C4008
C4016
R4004

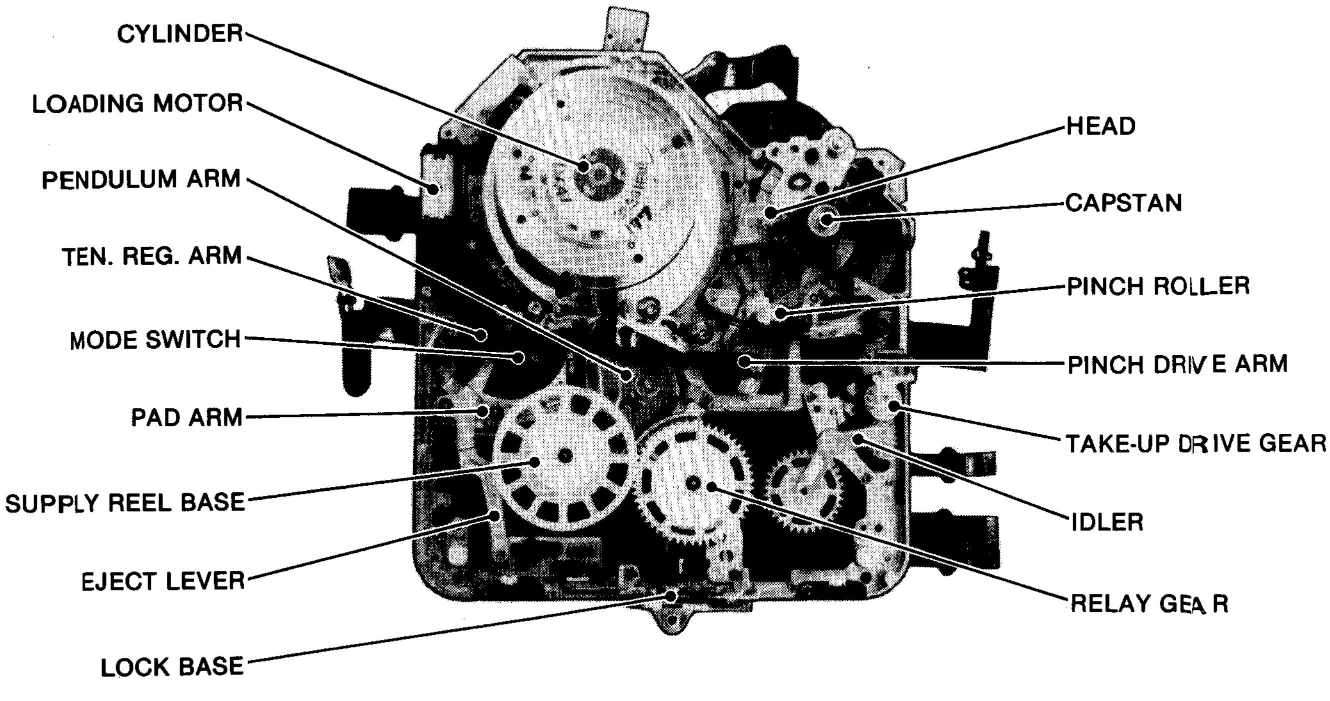
Fig. M40

1 Movement of Mechanism

1. Name of Mechanism


SUPPLY GUIDE RAIL
RING GUIDE
SUPPLY RING
S1 POST
TENTION POST
TEN. REG. SPRING
TAKE-UP GUIDE RAIL
T1 POST
T2 POST

*RING T is located underneath of RING GUIDE


CYLINDER
LOADING MOTOR
PENDULUM ARM
TEN. REG. ARM
MODE SWITCH
PAD ARM
SUPPLY REEL BASE
EJECT LEVER
LOCK BASE
HEAD
CAPSTAN
PINCH ROLLER
PINCH DRIVE ARM
TAKE-UP DRIVE GEAR
IDLER
RELAY GEAR

2. Movement to Mechanism

1. Loading operation

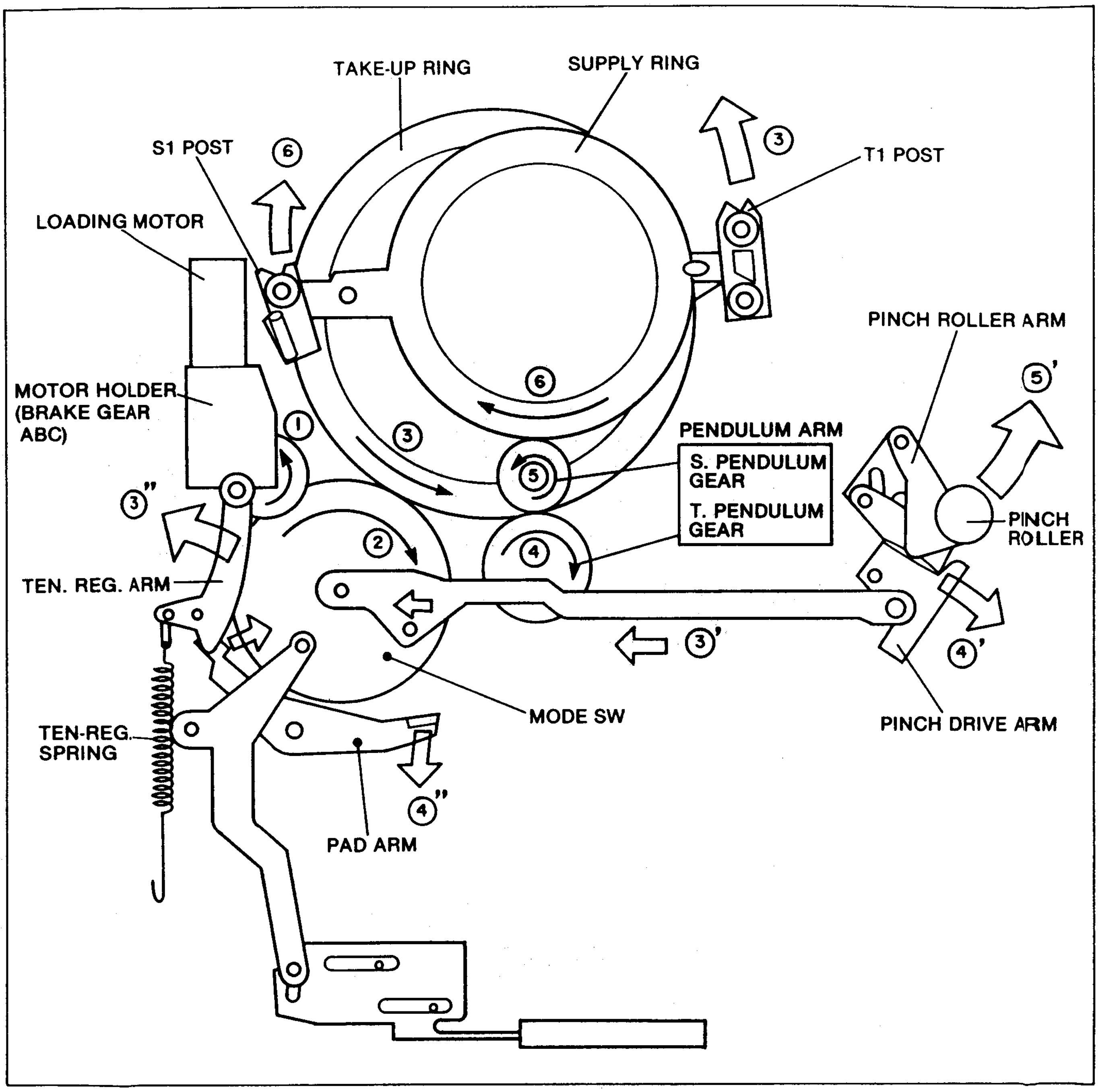

TAKE-UP RING
SUPPLY RING
S1 POST
⑥
③
T1 POST
LOADING MOTOR
PINCH ROLLER ARM
⑤'
MOTOR HOLDER
(BRAKE GEAR ABC)
⑥
①
③
PENDULUM ARM
⑤
S. PENDULUM GEAR
T. PENDULUM GEAR
③"
PINCH ROLLER
②
④
TEN. REG. ARM
③'
④'
TEN-REG. SPRING
MODE SW
PINCH DRIVE ARM
④"
PAD ARM

Fig. 1 Loading Mechanism

Motive power of loading motor is transferred in the direction of the arrow.

Drive of loading post.
Head Contact Pinch Roller with capstan shaft.
(Play Position)
Head Contact Pad Arm with S.Reel table.
(Play Position)

2. Eject operation

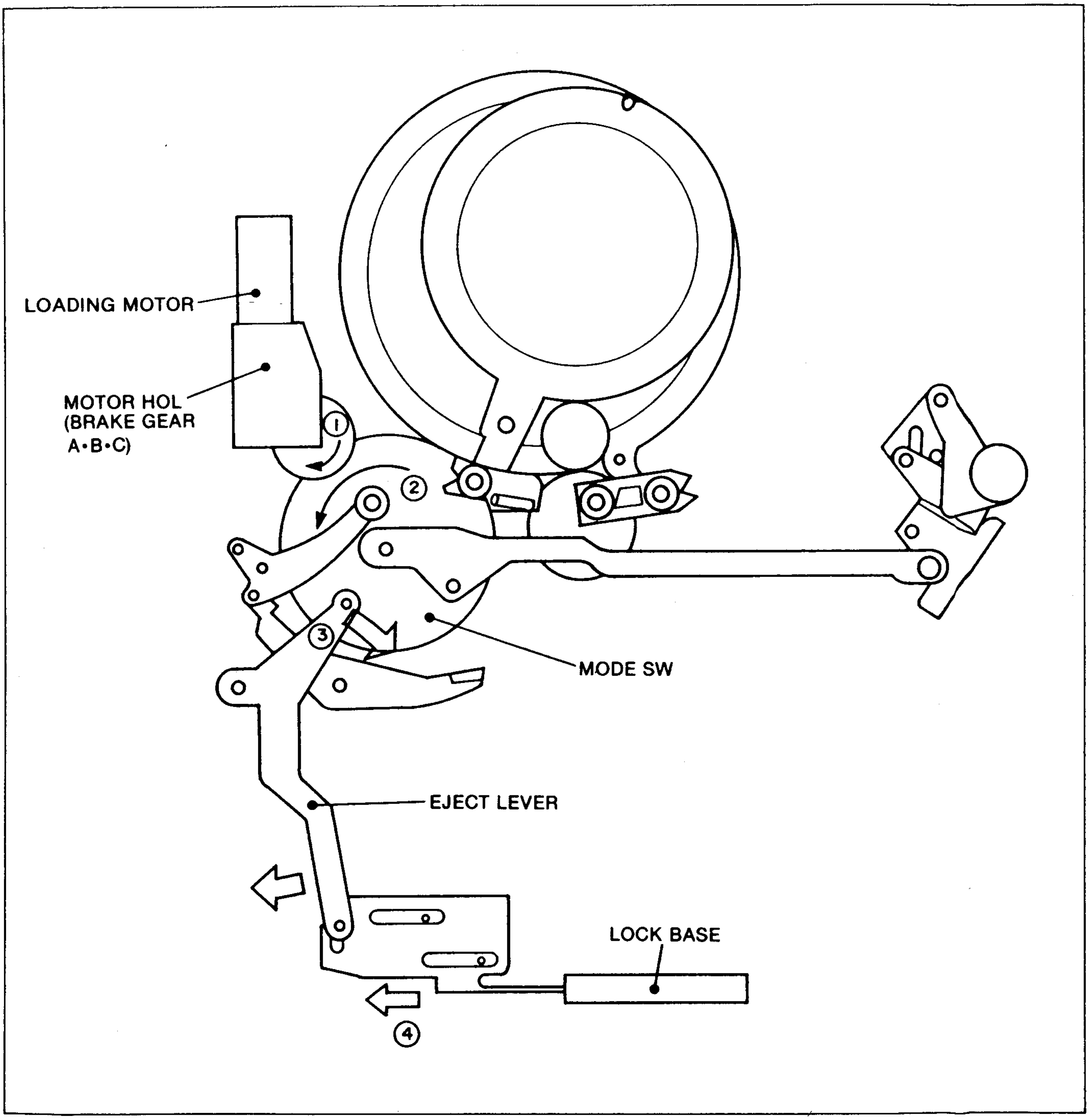

LOADING MOTOR
MOTOR HOL
(BRAKE GEAR
A•B•C)
①
②
③
④
MODE SW
EJECT LEVER
LOCK BASE

Fig. 2 Loading mechanism

Motive power of loading motor is transferred in numerical order.

After cassette up operation, the gears are moved in the opposite direction of the arrows, to turn back stop1 position.

3. Movement of Reel table

1. FF operation

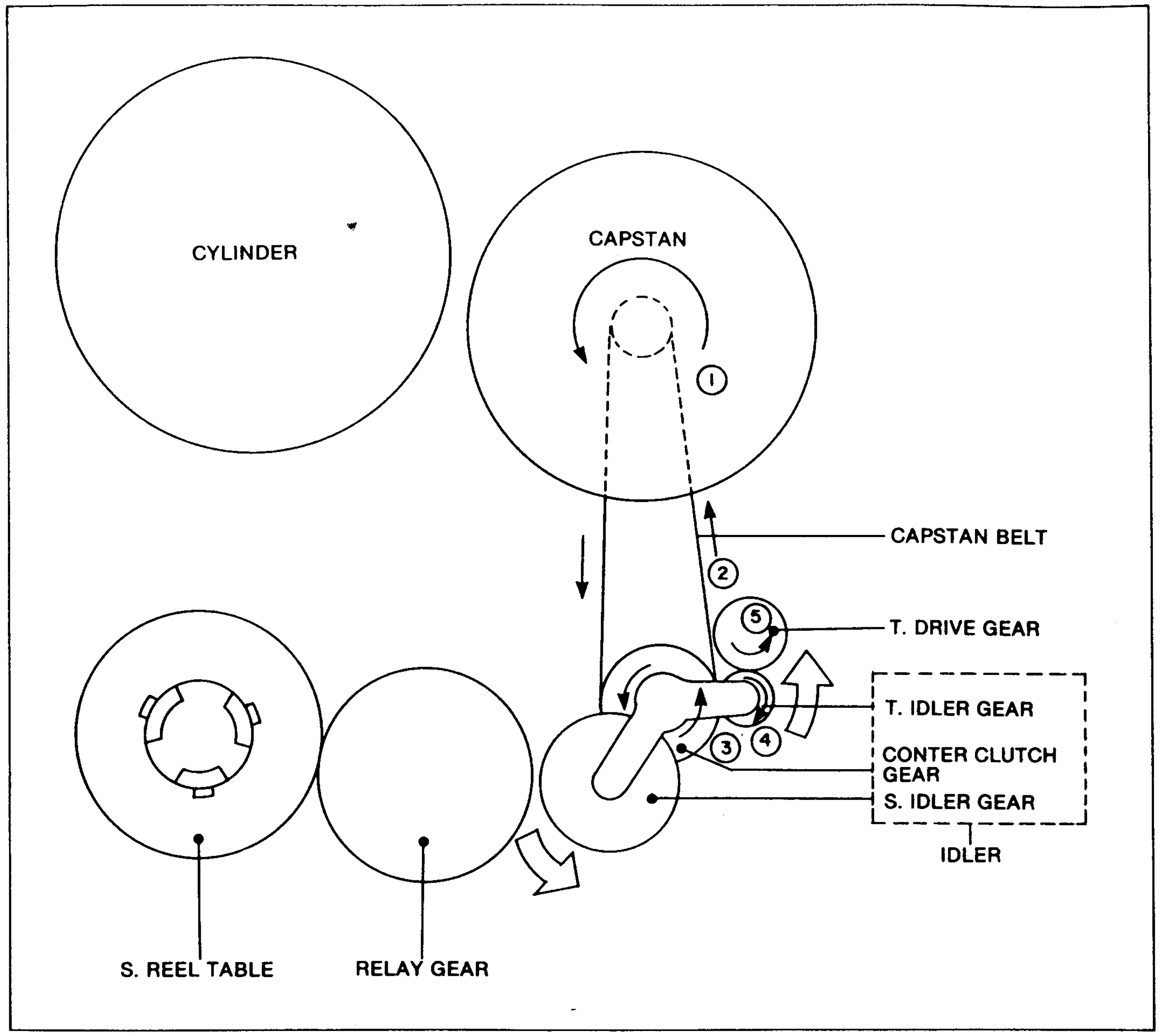

CYLINDER
CAPSTAN
①
CAPSTAN BELT
②
T. DRIVE GEAR
⑤
T. IDLER GEAR
③
④
CONTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 3 Take-Up side of Reel Drive

Motive Power of Capstan motor is transferred to idler (Center clutch Gear) through the capstan belt.

At this time, Position of idler is decided by rotation of capstan motor.

After that, Motive power is transferred in numerical order.

Finally, Take–up Reel is rotated by T.Drive Gear.

Pad Arm is moved by Ten. Reg. Arm, and then (the Ten.Reg.Arm is moved into contact) with lower side of S.Reel table in order to apply back tension to tape.

2. REW operation

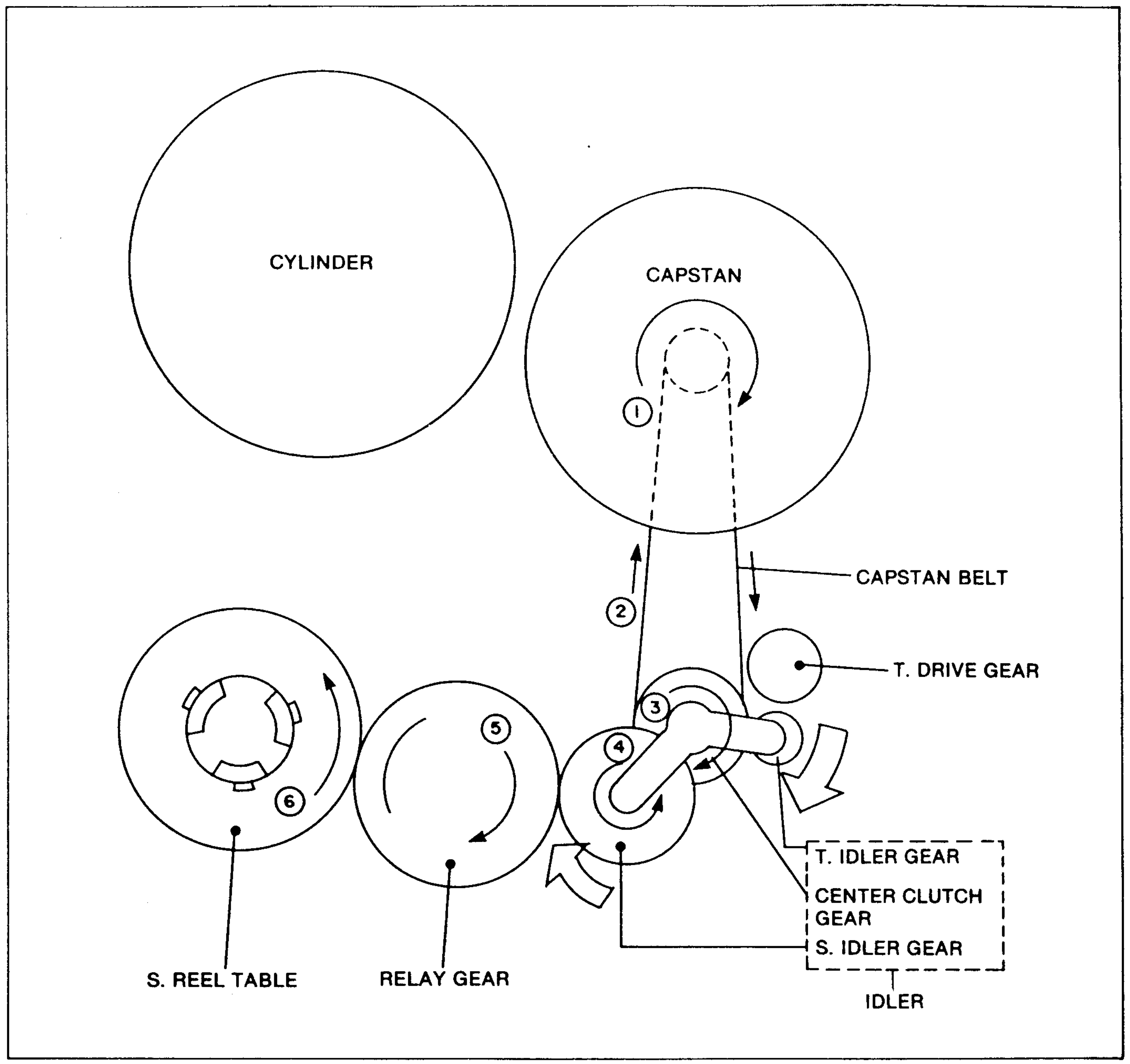

CYLINDER
CAPSTAN
①
CAPSTAN BELT
②
T. DRIVE GEAR
③
④
⑤
⑥
T. IDLER GEAR
CENTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 4 Supply side of Reel drive

Motive power is transmitted in numerical order.

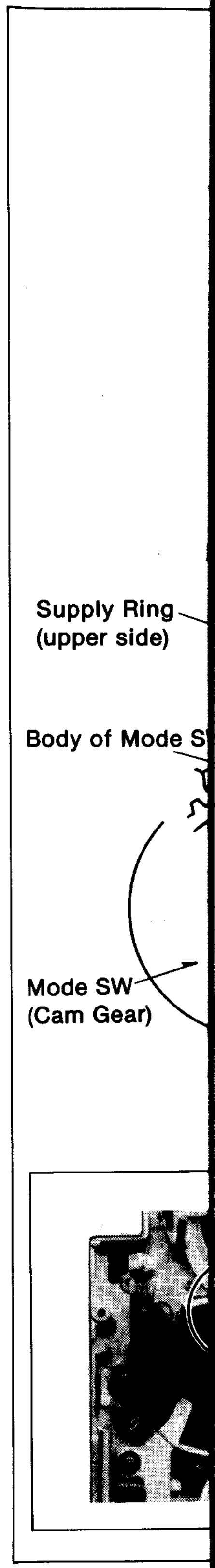
At this time, idler is in contact with the Relay Gear by capstan rotation.

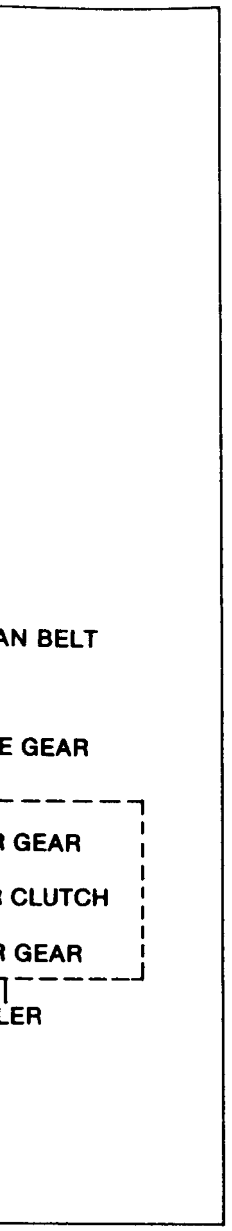
Back tension is generated by contact Drive Gear T with REW Torgue spring(Including the idler unit).

---

2 Alignmen

Following mecha


Supply Ring
(upper side)
Body of Mode S
Mode SW
(Cam Gear)


AN BELT
E GEAR
GEAR
CLUTCH
GEAR
LER

2. REW operation

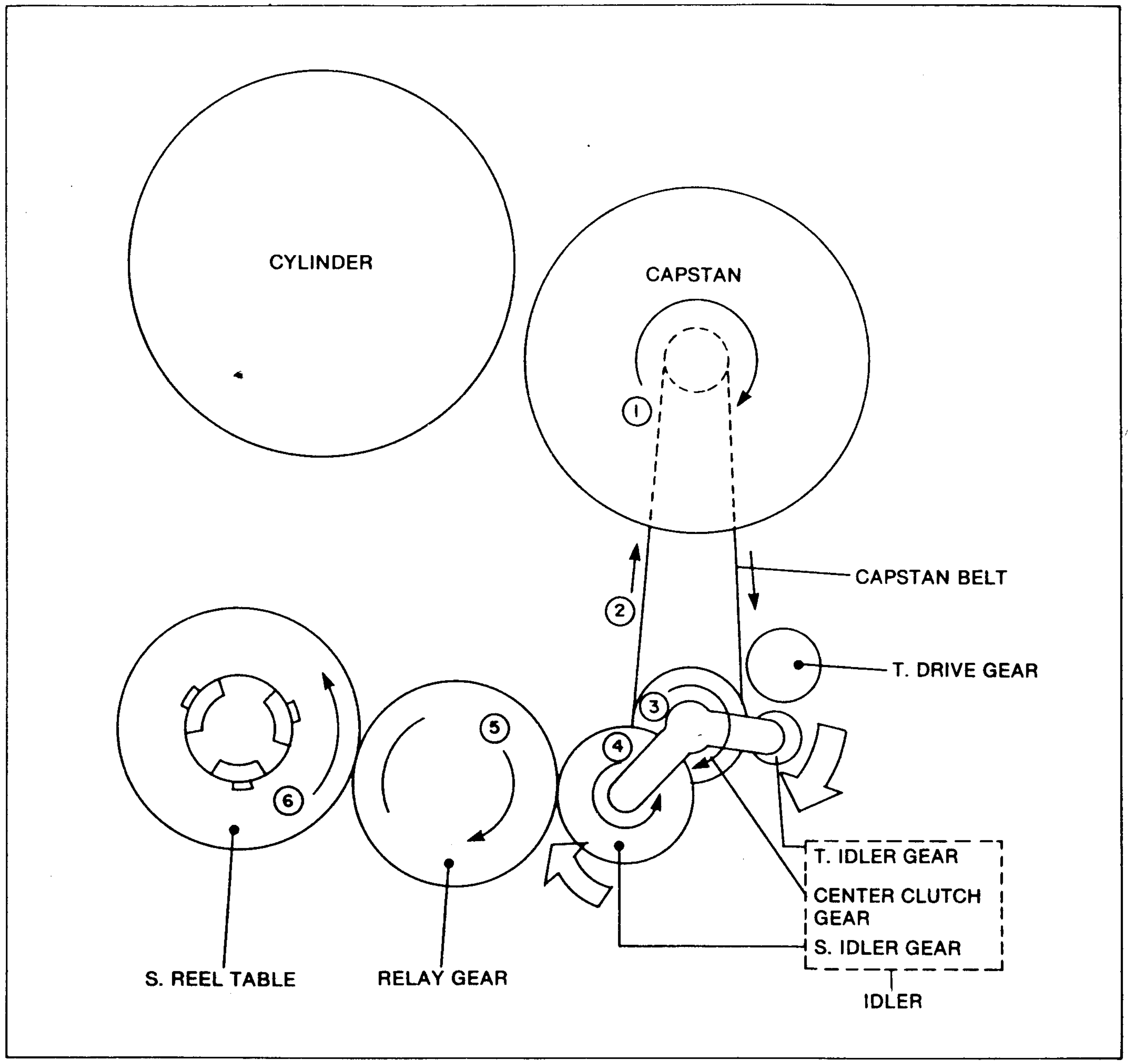

CYLINDER
CAPSTAN
①
②
③
④
⑤
⑥
CAPSTAN BELT
T. DRIVE GEAR
T. IDLER GEAR
CENTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 4 Supply side of Reel drive

Motive power is transmitted in numerical order.
At this time, idler is in contact with the Relay Gear by capstan rotation.
Back tension is generated by contact Drive Gear T with REW Torgue spring(Including the idler unit).

2 Alignment of Mechanism

Following mechanical phase Position is important for mechanical alignment.

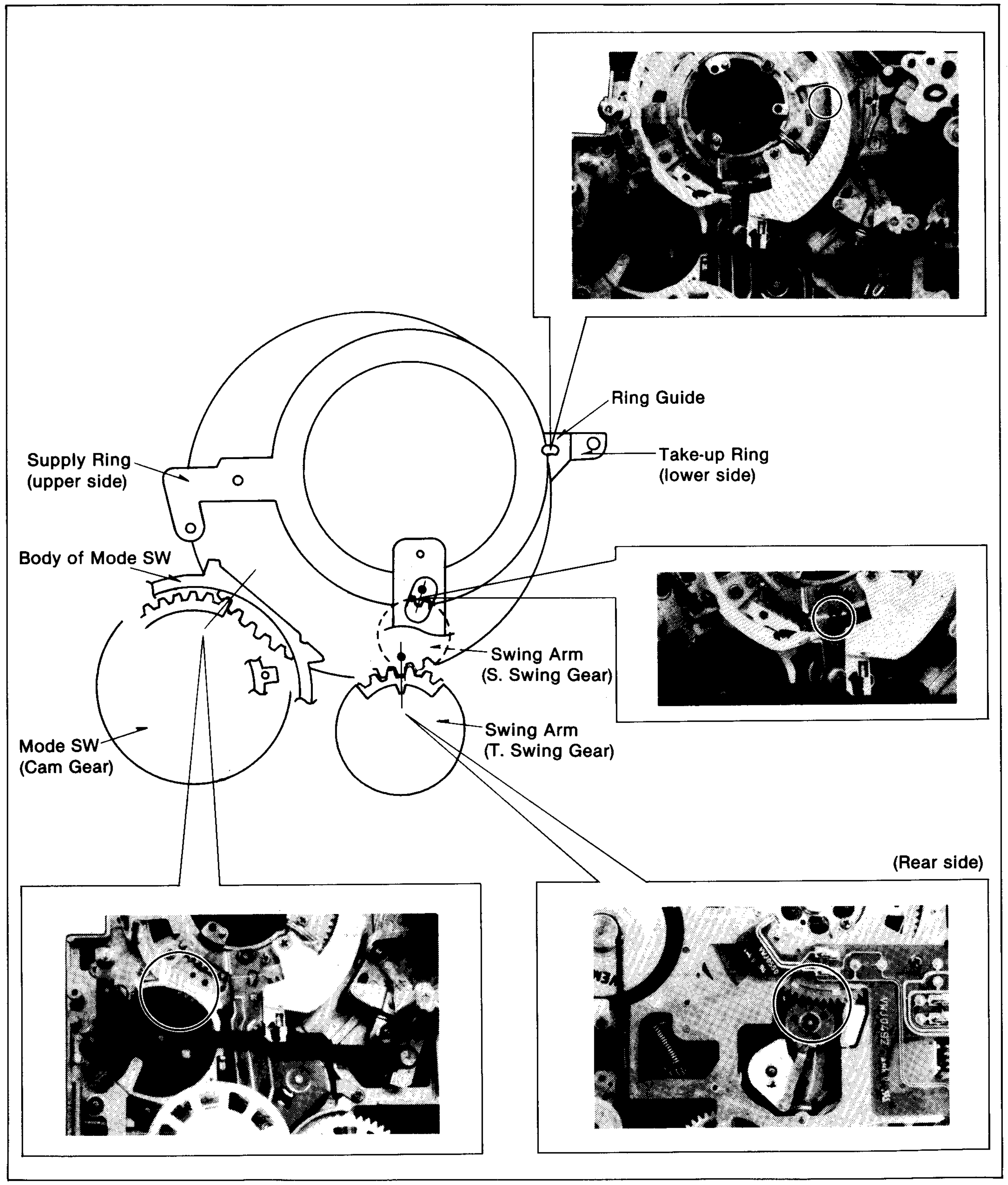
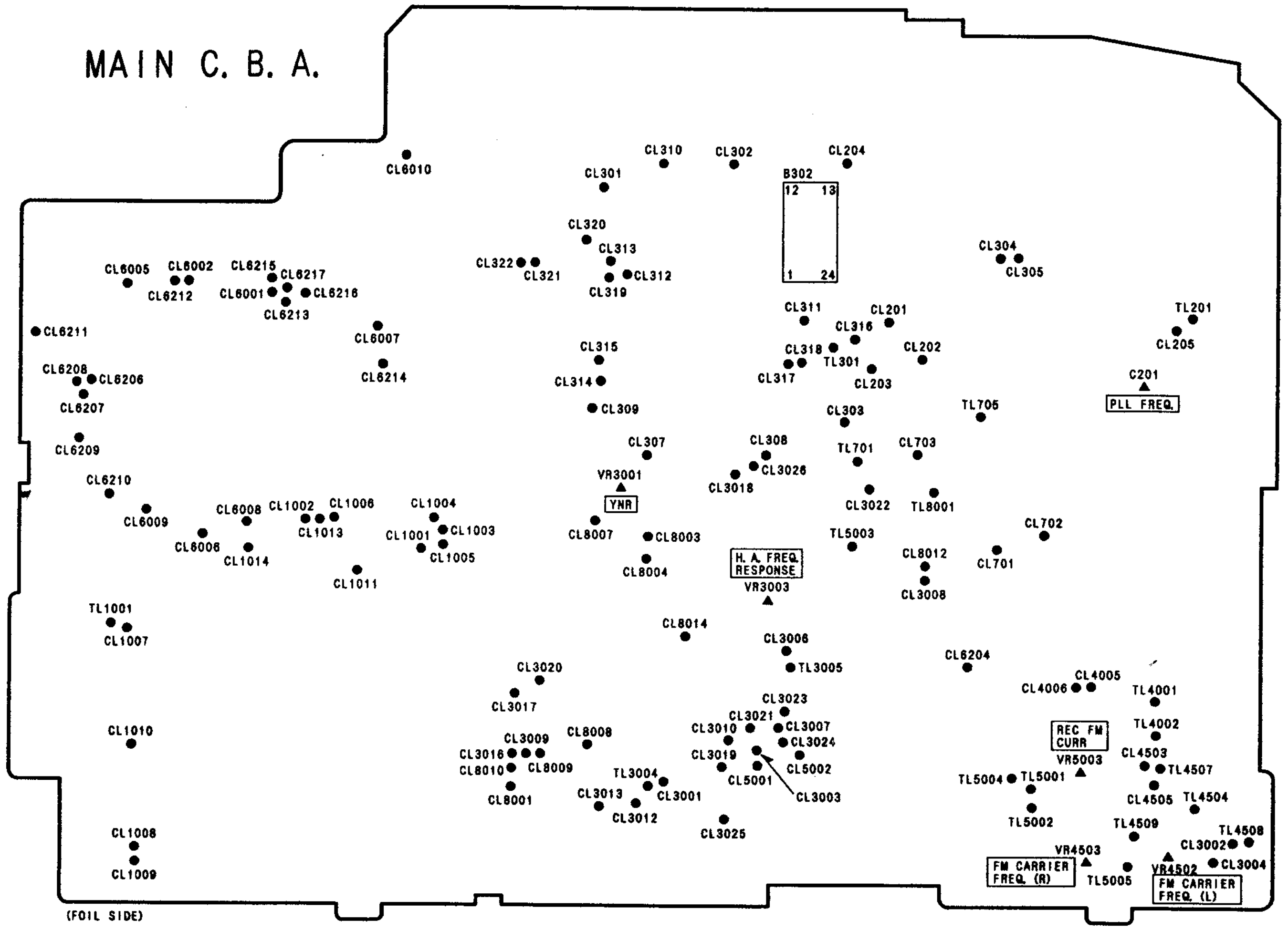
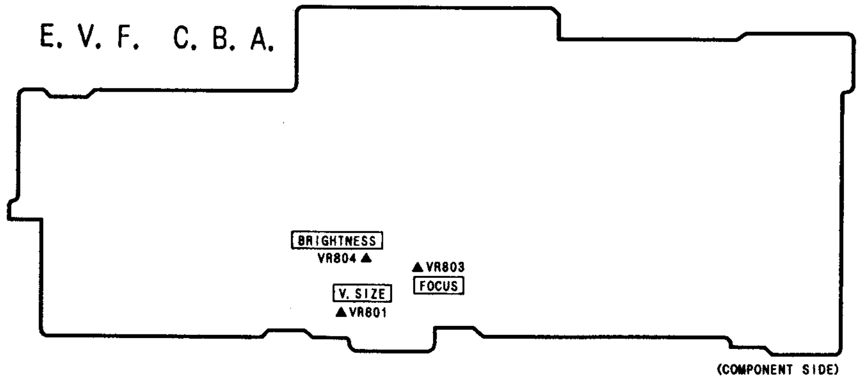

Ring Guide
Take-up Ring
(lower side)
Supply Ring
(upper side)
Body of Mode SW
Swing Arm
(S. Swing Gear)
Swing Arm
(T. Swing Gear)
Mode SW
(Cam Gear)
(Rear side)

Fig. 5 Mechanism Phase

Note : Adjustment procedure supplement for camera unit is separate volume from now.
Please refer to following manual for detail of adjustment procedure of camera.
Order number for adjustment procedure (camera) supplement : VMD9403M106.
(It will be supplied a few weeks later.)

LOCATION OF TEST POINTS & CONTROLS


MAIN C. B. A.
CL6010
CL301
CL310
CL302
CL204
B302
12
13
1
24
CL320
CL313
CL312
CL319
CL322
CL321
CL304
CL305
CL6005
CL6002
CL6215
CL6217
CL6212
CL6001
CL6216
CL6213
CL6211
CL6007
CL6214
CL6208
CL6206
CL6207
CL6209
CL311
CL201
CL316
CL318
CL202
TL301
CL317
CL203
CL315
CL314
CL309
TL201
CL205
C201
PLL FREQ.
CL303
TL705
CL307
VR3001
YNR
CL308
CL3026
CL3018
TL701
CL703
CL3022
TL8001
CL6210
CL6009
CL6008
CL1002
CL1006
CL1013
CL6006
CL1014
CL1004
CL1001
CL1003
CL1005
CL1011
CL8007
CL8003
CL8004
H. A. FREQ. RESPONSE
VR3003
TL5003
CL8012
CL3008
CL702
CL701
TL1001
CL1007
CL8014
CL3006
TL3005
CL6204
CL4005
CL4006
TL4001
CL3020
CL3017
CL3023
CL3021
CL3010
CL3007
CL3024
CL3019
CL5002
CL5001
CL3003
TL4002
REC FM CURR
VR5003
CL4503
TL4507
CL1010
CL3009
CL3016
CL8010
CL8009
CL8008
CL8001
TL3004
CL3001
CL3013
CL3012
CL3025
TL5004
TL5001
TL5002
CL4505
TL4504
TL4509
TL4508
CL3002
CL3004
VR4503
VR4502
FM CARRIER FREQ. (R)
TL5005
FM CARRIER FREQ. (L)
CL1008
CL1009
(FOIL SIDE)


E. V. F. C. B. A.
BRIGHTNESS
VR804
VR803
FOCUS
V. SIZE
VR801
(COMPONENT SIDE)

2-6. ELECTRICAL ADJUSTMENT PROCEDURES

2-6-1. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

The following equipments are required for adjustment of the VTR section of VHS-Movie.

1. DVM (Digital Volt Meter)
   Voltage Range : 0.01-50V
2. Dual Trace Oscilloscope.
   Voltage Range : 0.06-50V/div
   Frequency Range: 0-50MHz
   Probe : 10:1 or 1:1
   Frequency Range: 0-10MHz
3. Video Sweep Generator
   Frequency Range: 0-10MHz
4. Colour Monitor TV
5. Plastic Tip Driver
6. VHS-C Movie Aligment Tape (VFM8180HUPF)
7. VHS-C Blank Tape

PREPARATION

1. Remove the casing panels.
   (Please refer to disassembly method)
2. Connect the extension cables is necessary.

VFK0727	(Main C.B.A FP6001~MECH-CHASSIS)
VFK0728	(Main C.B.A FP4001~AC HEAD)
VFK0729	(Main C.B.A FP6002~MECH-CHASSIS)
VFK0929	(Main C.B.A B2011 ~CCD)
VFK0839	(Main C.B.A B1001 ~E.V.F C.B.A B1601)
VFK0949	(Main C.B.A FP6005~DRIVE C.B.A FP2003)
VFK0913	(Main C.B.A FP701 ~LENS UNIT)

NOTE: Please remove the S/S POWER SW, AV-JACK and Zoom SW from side case (L) unit.

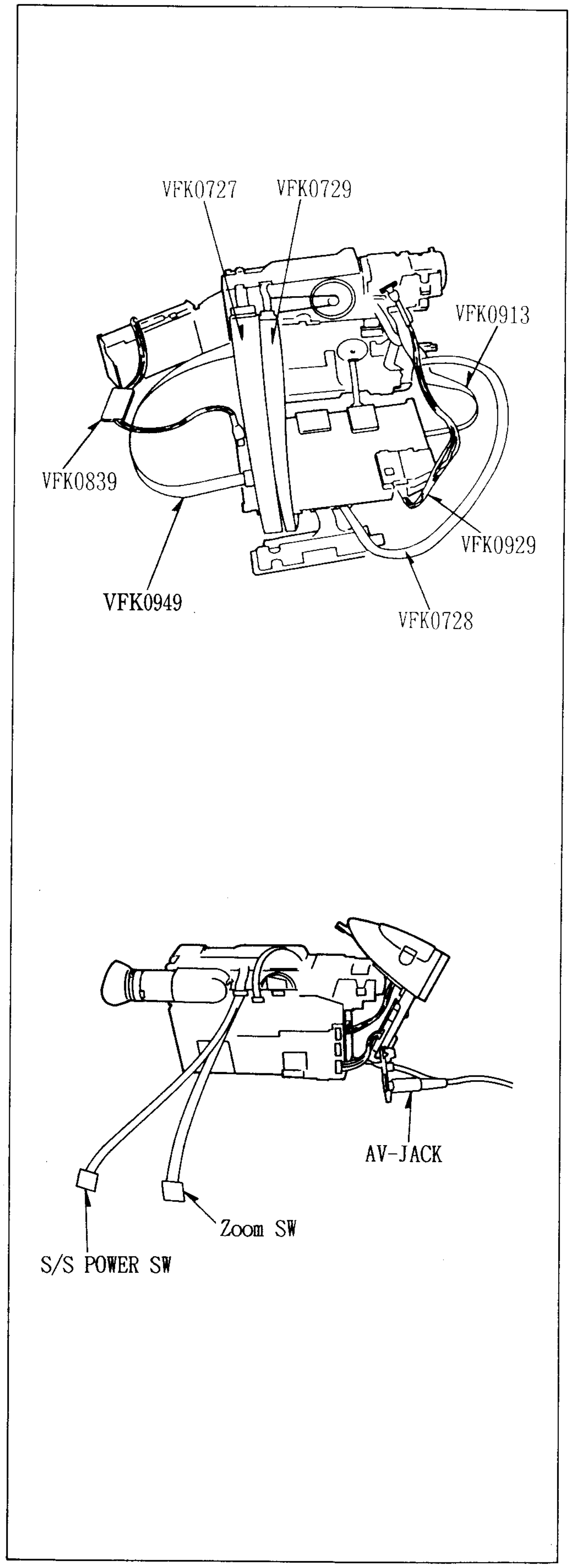
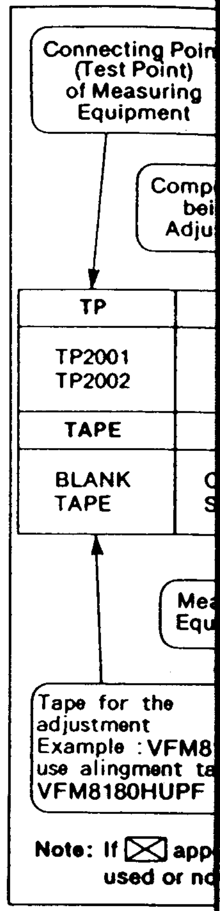

VFK0727
VFK0729
VFK0913
VFK0839
VFK0929
VFK0949
VFK0728
AV-JACK
Zoom SW
S/S POWER SW

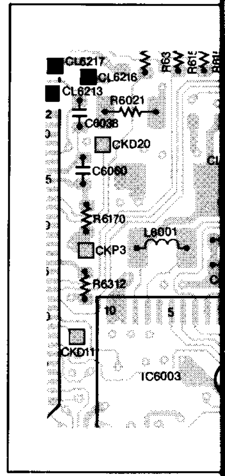
Fig. V1

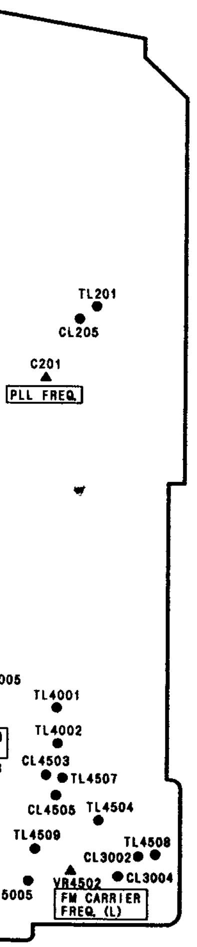
HOW TO READ T
PROCEDURES


Connecting Poin
(Test Point)
of Measuring
Equipment
Comp
bei
Adju
TP
TP2001
TP2002
TAPE
BLANK
TAPE
C
S
Mea
Equ
Tape for the
adjustment
Example : VFM8
use alingment ta
VFM8180HUPF
Note: If ☒ app
used or no

Note:Triggering
To trigger the
point is used.

H. Rate : Video O
V. Rate : B6004-6


CL6217
CL6216
CL6213
R6021
C6038
CKD20
C6060
R6170
L6001
CKP3
R6312
CKD11
IC6003
10
5
R63
R61


TL201
CL205
C201
PLL FREQ.
TL4001
TL4002
CL4503
TL4507
CL4505
TL4504
TL4509
TL4508
CL3002
CL3004
VR4502
FM CARRIER FREQ. (L)

2-6. ELECTRICAL ADJUSTMENT PROCEDURES

2-6-1. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

The following equipments are required for adjustment of the VTR section of VHS-Movie.

1. DVM (Digital Volt Meter)
   Voltage Range : 0.01-50V
2. Dual Trace Oscilloscope.
   Voltage Range : 0.06-50V/div
   Frequency Range: 0-50MHz
   Probe : 10:1 or 1:1
   Frequency Range: 0-10MHz
3. Video Sweep Generator
   Frequency Range: 0-10MHz
4. Colour Monitor TV
5. Plastic Tip Driver
6. VHS-C Movie Aligment Tape (VFM8180HUPF)
7. VHS-C Blank Tape

PREPARATION

1. Remove the casing panels.
   (Please refer to disassembly method)
2. Connect the extension cables is necessary.

VFK0727	(Main C.B.A FP6001~MECH-CHASSIS)
VFK0728	(Main C.B.A FP4001~AC HEAD)
VFK0729	(Main C.B.A FP6002~MECH-CHASSIS)
VFK0929	(Main C.B.A B2011 ~CCD)
VFK0839	(Main C.B.A B1001 ~E.V.F C.B.A B1601)
VFK0949	(Main C.B.A FP6005~DRIVE C.B.A FP2003)
VFK0913	(Main C.B.A FP701 ~LENS UNIT)

NOTE: Please remove the S/S POWER SW, AV-JACK and Zoom SW from side case (L) unit.

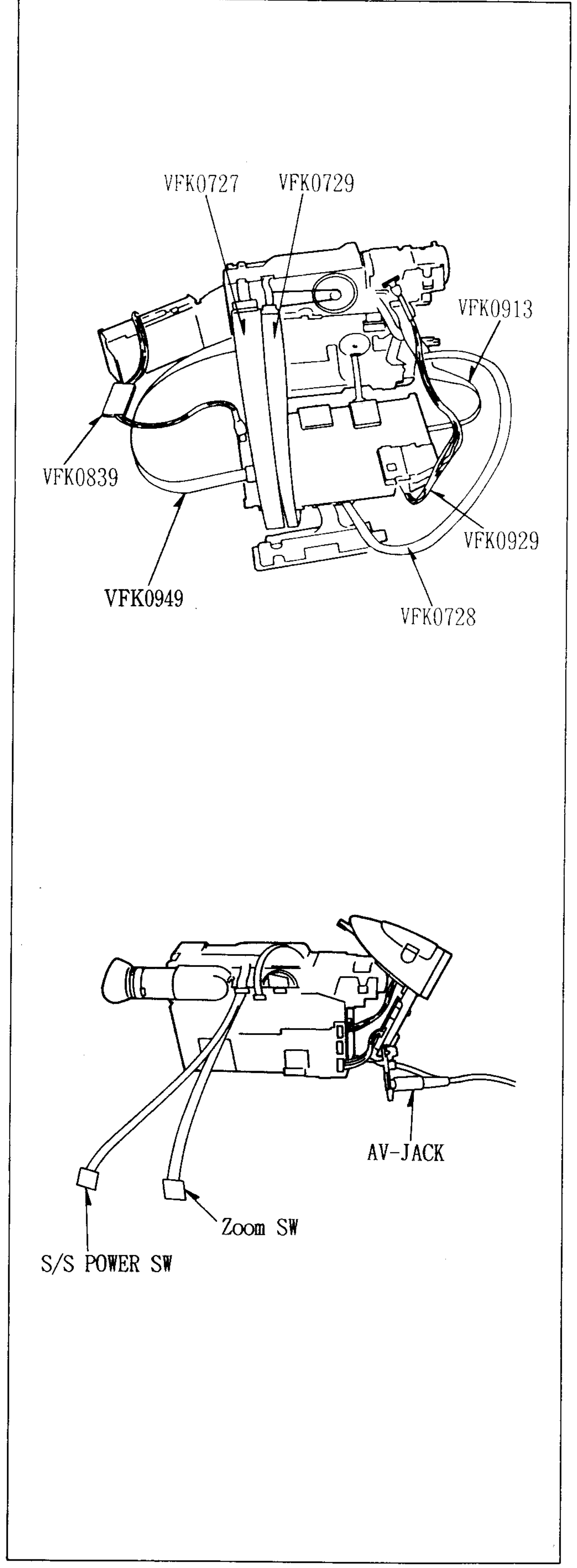
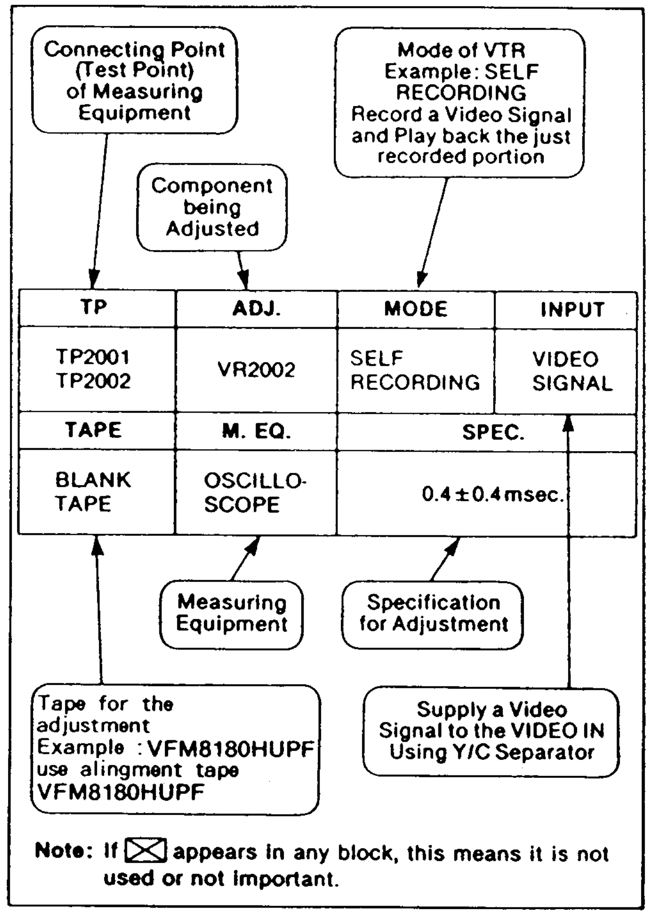

VFK0727
VFK0729
VFK0913
VFK0839
VFK0929
VFK0949
VFK0728
AV-JACK
Zoom SW
S/S POWER SW

Fig. V1

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Component being Adjusted
Mode of VTR Example: SELF RECORDING Record a Video Signal and Play back the just recorded portion
TP
ADJ.
MODE
INPUT
TP2001
TP2002
VR2002
SELF RECORDING
VIDEO SIGNAL
TAPE
M. EQ.
SPEC.
BLANK TAPE
OSCILLO-SCOPE
0.4±0.4msec.
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example :VFM8180HUPF use alingment tape VFM8180HUPF
Supply a Video Signal to the VIDEO IN Using Y/C Separator

Note: If ☒ appears in any block, this means it is not used or not important.

Note:Triggering the Oscilloscope
To trigger the Oscilloscope, the following test point is used.

H.Rate : Video Output
V.Rate : B6004-6 (Head switching Signal)

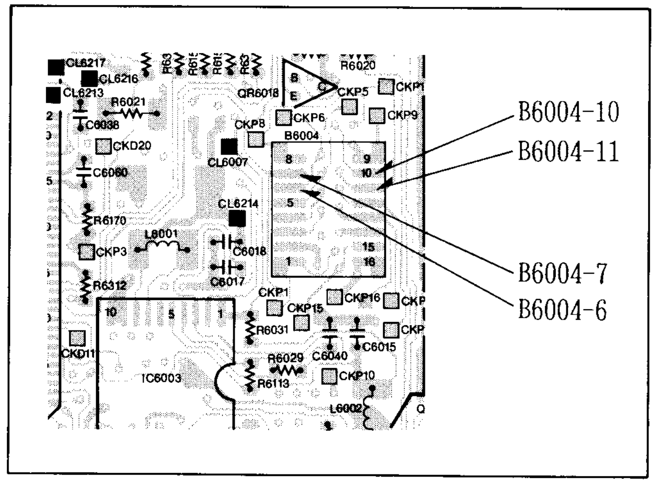

CL6217
CL6216
CL6213
R6021
QR6018
R6020
CKP5
CKP6
CKP9
CKP8
B6004
CKD20
C6080
CL6007
CL6214
R6170
L6001
C6018
CKP3
C6017
R6312
CKP1
CKP15
CKP16
R6031
C6015
R6029
C6040
R6113
CKP10
L6002
CKD11
IC6003
B6004-10
B6004-11
B6004-7
B6004-6

Fig. V2

1. LUMINANCE & CHROMINANCE SECTION

(1). YNR ADJUSTMENT

Purpose:

Improve the overall S/N Ratio especially in the Low Frequency Component.

Symptom of Misadjustment:

The S/N ratio is low.

T P	ADJ.	MODE	INPUT
TL3004	VR3001	PLAYBACK	☒
TAPE	**M. EQ**	**SPEC**	
ALIGNMENT TAPE VFM8180HUPF	OSCILLOSCOPE	SIGNAL IS MINIMIZED (LESS THAN 50mV)	

1. Playback the alignment tape.
2. Connect the oscilloscope to TL3004.
3. Adjust VR3001 so that signal is minimized.

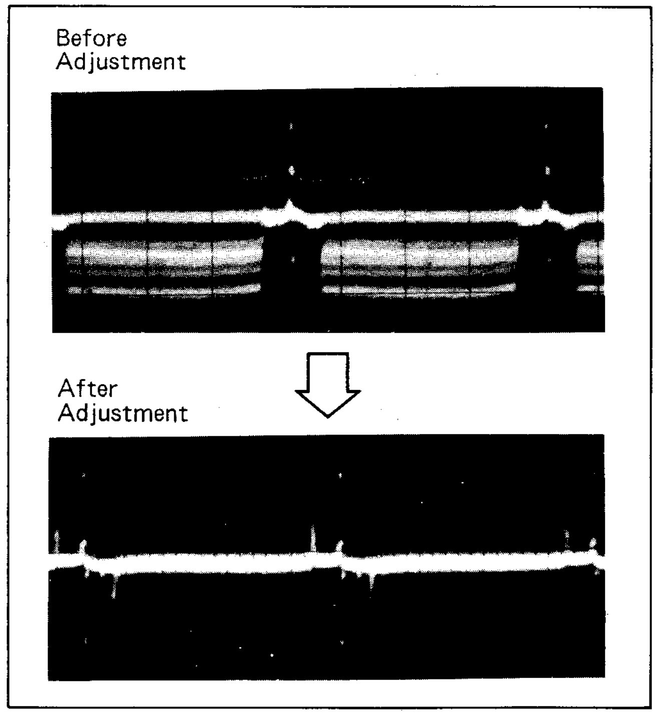


Fig. V3

[2].HEAD AMP FREQUENCY RESPONCE ADJUSTMENT

Purpose:
To improve Video Frequency Response Level.

Symptom of Misadjustment:
Video Frequency Response deteriorates.
Picuture becomes noisy.

T P	ADJ.	MODE	INPUT
VIDEO OUT	VR3003	REC & PLAYBACK	VIDEO SWEEP SIGNAL
TAPE	**M. EQ**	**SPEC**	
VHS-C BLANK TAPE	OSCILLOSCOPE VIDEO SWEEP	2MHz/0.1MHz = 1/1 (0±1dB (100%))	

NOTE:
Connect the jumper wire between B6004-7 and B6004-11
After that video signal can be input through B6004-10.

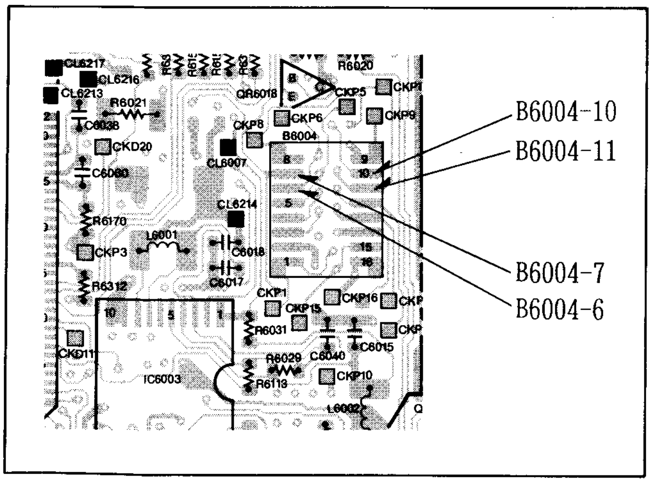
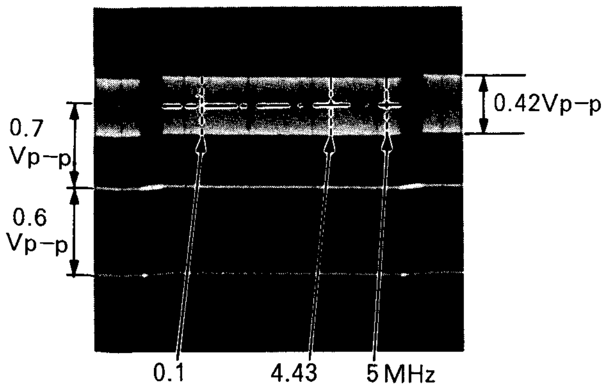


Fig. V4

1. Set the sweep generator output as shown below.



CONDITIONS : 1. BURST SIGNAL OFF
2. 75ohm TERMINATED

Fig. V5

2. Supply sweep signal to B6004-10.
3. Record the signal for few minutes.
4. Playback the recorded signal.
5. Adjust VR3003 so that level at the 2 MHz is within spec as shown below.

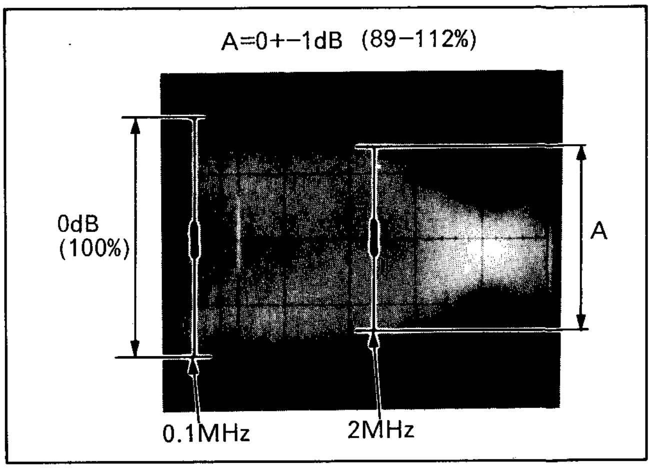


Fig. V6

2. AUDIO SECTION

[1].FM CARRIER FREQUENCY ADJUSTMENT

T P	ADJ.	MODE	INPUT
TL4507(L) TL4508(R)	VR4502(L) VR4503(R)	REC	
TAPE	**M. EQ**	**SPEC**	
VHS-C BLANK TAPE	FREQUENCY COUNTER	TL4507(L) = 1.4M± 10KHz TL4508(R) = 1.8M± 10KHz	

1. Disconnect the connector P4001.
2. Turn the unit to rec mode.
3. Connect the Frequency counter to TL4507.
4. Adjust the VR4502 until signal frequency become 1.4M ±10KHz.
5. Connect the Frequency counter to TL4508.
6. Adjust the VR4503 until signal frequency become 1.8M ±10KHz.

(2).FM RECORDING CURRENT ADJUSTMENT

T P	ADJ.	MODE	INPUT
TL5003(HOT) TL5004(GND)	VR5003	REC	
TAPE	M. EQ	SPEC	
VHS-C BLANK TAPE	OSCILLOSCOPE	210 ± 10mV	

1. Disconnect the connector P4001.
2. Connect the Oscilloscope to TL5003(HOT) and TL5004(GND).
3. Adjust the VR5003 so that the recordign current become 210 ± 10mV .

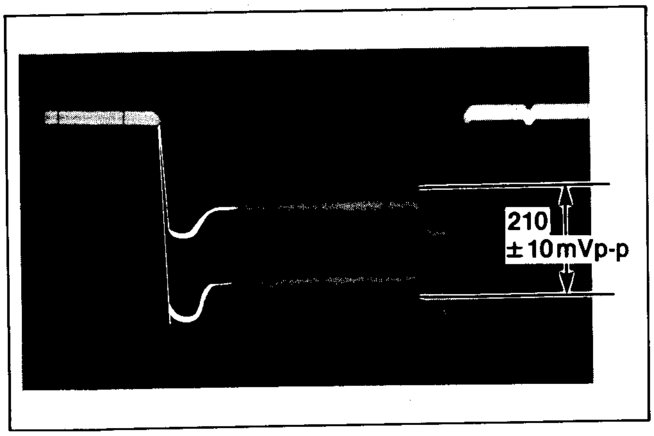


Fig. V7

2-6-2. ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

The follwing adjustment are for Electric Viewfinder.

Note:

(A). Connect the Viewfinder to unit.

(B). The camera unit circuit must be completely aligned before viewfinder adjustment are made.

(1).CENTREING ADJUSTMENT

1. Aim the camera at the registration chart.
2. Adjust the deflection yoke centreing magnets turning them so that the picture on E.V.F unit is centred.

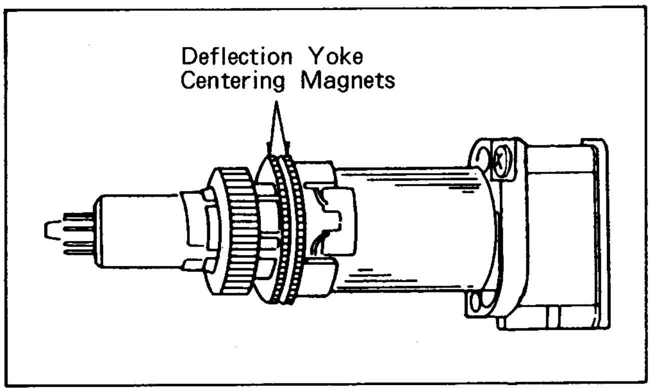


Fig. E1

(2).FOCUS ADJUSTMENT

T P	ADJ.	LENS CAP	CHART
	VR803	REC	BALL CHART
M. EQ		SPEC	
VIEWFINDER		BEST RESOLUTION	

NOTE: VR803 is located on E.V.F.C.B.A

(1). Aim the camera at the Ball Chart.

(2). Adjust the VR803 for best resolution in Viewfinder.

NOTE:

After perfoming this adjustment, confirm position of "A" part on the VR803.

"A" part must be outside of 100 degree.

When "A" part is inside of 100 degree, must be re-adjust it..

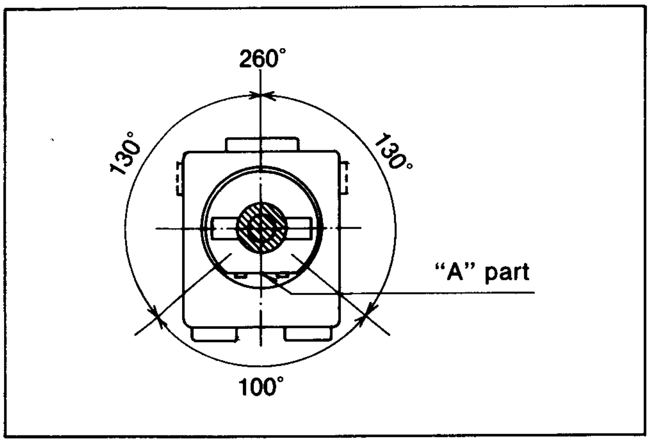


Fig E2

[3]. VERTICAL SIZE ADJUSTMENT

T P	ADJ.	LENS CAP	CHART
	VR801	NO	GRAY SCALE CHART
M. EQ		SPEC	
VIEWFINDER		VERTICAL SIZE IS FIXED	

NOTE: VR801 is located on E.V.F.C.B.A

(1). Aim the camera at the Gray Scale Chart.

(2). Adjust the VR801 for best vertical size.
(Picture does not roll as shown below.)

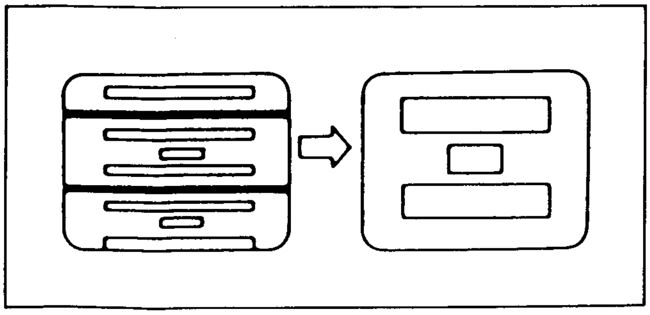


Fig. E3

[4]. BRIGHTNESS ADJUSTMENT

T P	ADJ.	LENS CAP	CHART
	VR804	NO	GRAY SCALE CHART
M. EQ		SPEC	
VIEWFINDER		NATURAL GRADATION	

NOTE: VR804 is located on E.V.F.C.B.A

(1). Aim the camera at the Gray Scale Chart.

(2). Adjust the VR804 so that the brightness in the viewfinder is the same as monitor TV screen.

NOTE: Following Adjustments required EVR fixture. So, adjustment procedure described on Service manual VMD9403M106.

1:Croma Recording Current Adjustment
2:Luminance Recording Current Adjustment
3:PG shifter Adjustment

Memo

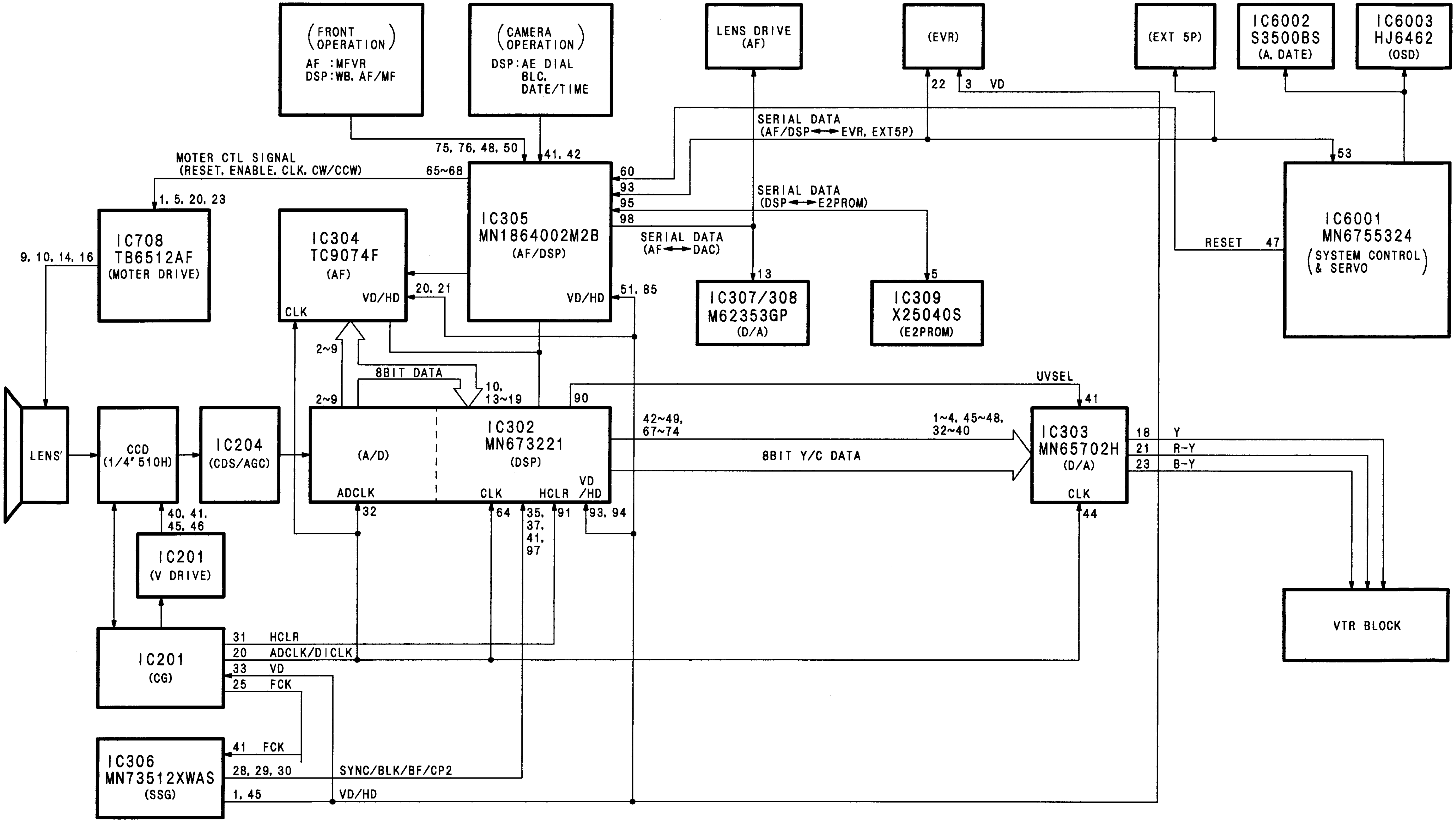
SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. ABBREVIATIONS

INITIAL/LOGO		ABBREVIATION
	3R3V	3.3V
A	A.TR	AUTO TRACKING
	ABSF	FOCUS ENCORDER INPUT
	ADCLK	A/D CLOCK
	ADCNT	A/D CONTROL
	ADREC	AUDIO DELAIED REC
	ADUB	AUDIO DUBBING
	AE	AUTO EXPOSURE
	AECNT	AUTO EXPOSURE CONTROL
	AEIRQ	AUTO EXPOSURE INTERRUPT REQUEST
	AFADE	AUDIO FADE
	AGCCNT	AUTO GAIN CONTROL
	ALCCNT	ALC CONTROL
	ALCMAIN	ALC DRIVE
	AMUT	AUDIO MUTE
	AORP	AUDIO OVER LAP PULSE
	APS	AUTO POWER SAVER
	ARTV	ARTIFICAL VERTICAL SYNC
	AWTB	AUTO WHITE TRACKING B-Y SIDE
	AWTR	AUTO WHITE TRACKING R-Y SIDE
B	B-Y KB	B-Y CARRIER BALANCE
	BACK	BACK UP
	BEND	BLOCK AVERAGE DATA INTERRUPT
	BF	BURST FLUG PULSE
	BFA	BURST FLUG FOR ENCODER
	BL	BACK LIGHT
	BLDIN	BACK LIGHT DRIVE PULSE INPUT
	BLDOUT	BACK LIGHT DRIVE PULSE OUTPUT
	BLK	BLANKING PULSE
	BM	BALANCED MODULATOR
	BUF	BUFFER
C	CAPVM	CAPSTAN MOTOR CURRENT
	CCW	COUNTER CLOCK WISE
	CDS	CCD (SENSOR CIRCUIT) OUTPUT
	CFM 1~4	CHROMINANCE FIELD MEMORY
	CGC	CHROMINANCE GAIN CONTROL
	CH1	Channel 1 (Odd field)
	CHR MIX	CHARACTER MIX
	CK or CLK	CLOCK
	CLK2	CLOCK 2 (824XFH=12.875MHz)
	CMEM	CHROMINANCE MEMORY SIGNAL
	CMO	CHROMA MEMORY OUTPUT
	CO0~7	CHROMA OUTPUT (DIGITAL:8BIT)
	CP	CLAMP PULSE
	CPOB	OB CLAMP PULSE
	CS	CHIP SELECT
	CSEL1~2	CLOCK PHASE SELECT
	CW	CLOCK WISE
	CYLVM	CYLINDER MOTOR CURRENT
D	D MODE0~2	DIGITAL MODE SWITCH SIGNAL
	D0 ~ D8	VIDEO OUT (DIGITAL 9BIT)
	DCLR	DIGITAL CLEAR
	DICLK	DIGITAL CLOCK
	DISCS	DIS CHIPSELECT
	DL	DELAY LINE
	DRK	DARK
	DS 1~2	DOUBLE SAMPLING PULSE
	DSP	DIGITAL SIGNAL PROCESS
	DZ	DIGITAL ZOOM
	DZ/OZ	DIGITAL ZOOM/OPTICAL ZOOM
E	ECM	ELECTRIC CONDENCER MIC
	ENV DET	ENVELOPE LEVEL DETECT
	EZOOM	ELECTRIC ZOOM
F	FAR	FAR (FOCUS)
	FCK	CLOCK (SENSOR:12.875MHz)
	FENC	FOCUS ENCODER
	FH2B	FH/2 (15.625/2=7.8125kHz)
	FM MUTE	FM AUDIO MUTE
	FM0~7	FIELD MEMORY INPUT 8BIT
	FMD REC	FM AUDIO RELAYED REC
	FMOEM	FIELD MEMORY ENABLE
	FNO	F VALUE
G	GCNT	GAIN CONTROL
H	H1 ~ 2	H.CCD DRIVE PULSE
	HBRSET	HIGH BRIGHT SET
	HCLR	HIGH CLEAR
	HD	HORIZONTAL DRIVE PULSE
	HEX	HEXADECIMAL
	HLT	HIGHT BRIGHT SIGNAL
I	INTER	INTERVAL RECORDING
	IOU	R-Y ANALOGUE SIGNAL OUTPUT
	IOV	B-Y ANALOGUE SIGNAL OUTPUT
	IRQ	INTERRUPT REQUEST
	IRQ	INTERRUPT REQUEST
K	KANDO	DIGITAL GAIN-UP
L	LD	LOAD PULSE
	LEDCNT	LED CONTROL
	LI BATT	LITHIUM BATTERY
	LSB	LEAST SIGINIFICANT BIT
M	MD	MODULATOR
	MFF	MANUAL FOCUS FAR
	MFN	MANUAL FOCUS NEAR
	MSB	MOST SIGNIFICANT BIT
N	N/F	NEAR/FAR (FOCUS)
	N/P	NTSC/PAL
	NC	NO CONNECTION
	NC1~3	NPN TRANSISTOR C-SIDE
	NDE	NON LINER DE-EMPHASIS
	NEAR	NEAR (FOCUS)
	NLE	NON LINER EMPHASIS
	NRD	NON REC DATA
	NRDBLK	NON REC DATA BLANKING
	NRE	READ ENABLE INPUT(LOW ACTIVE)
	NWE	WRITE ENABLE INPUT(LOW ACTIVE)
O	OBCNT	OPTICAL BLACK CONTROL
	OE	OUTPUT ENABLE
	OP	OPERATIONAL AMP OUTPUT
	OSD	ON SCREEN DISPLAY

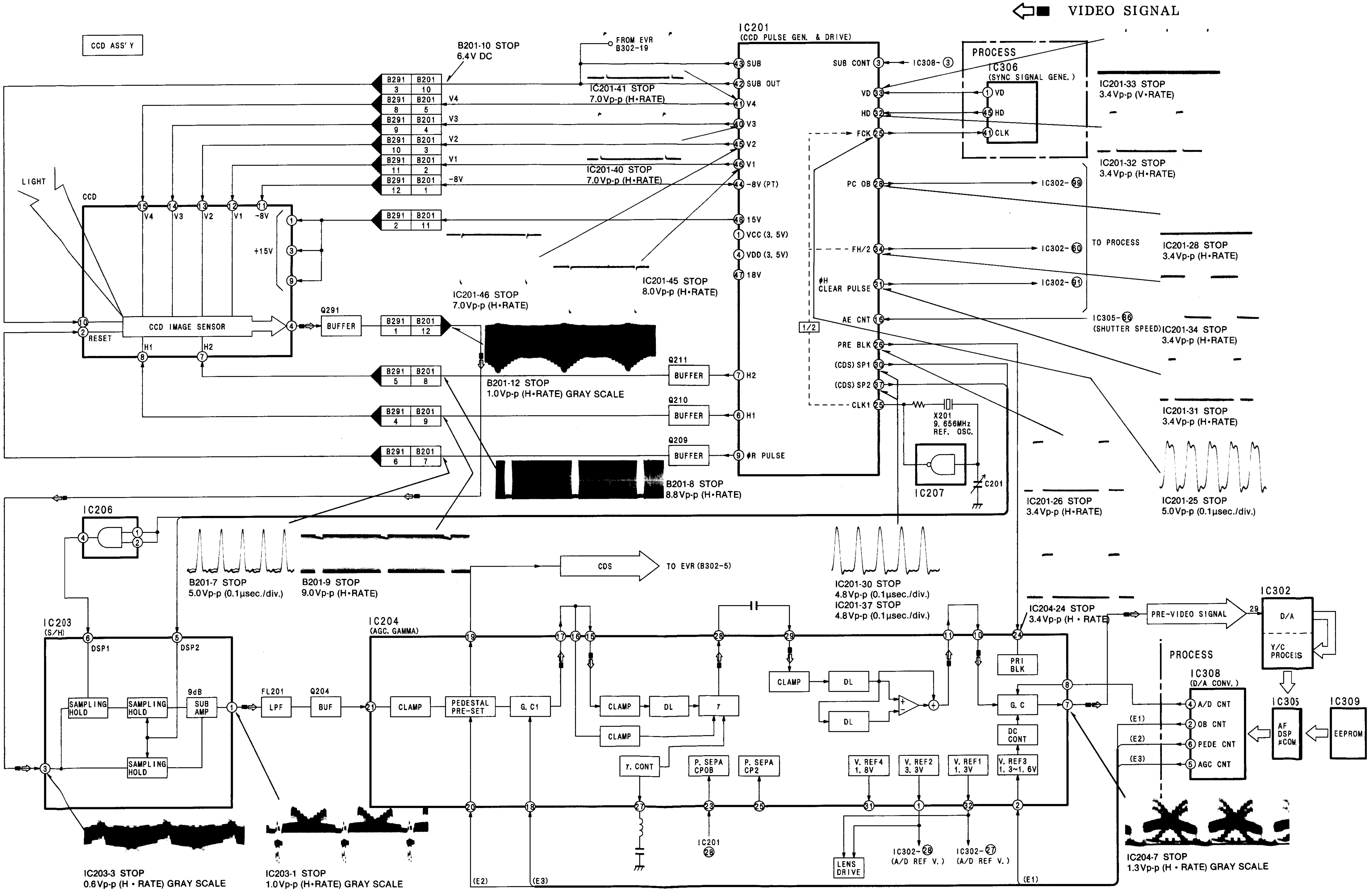
INITIAL/LOGO		ABBREVIATION
P	PB1~3	PNP TRANSISTOR B-SIDE
	PBLK	PRE-BLANKING
	PCBM(B-Y)	B-Y CARRIER BALANCE
	PCBM(R-Y)	R-Y CARRIER BALANCE
	PEDECNT	PEDESTAL CONTROL
	POR	POWER ON RESET
	PREBLK	PRE-BLANKING
	PT	PROTECT FOR ΦV VOLTAGE (-8V)
	PWM	PULSE WIDTH MODULATOR
R	R/B	READY/BUSY
	R-Y KB	R-Y CARRIER BALANCE
	RAD	READ ADDRESS DATA
	RAE	READ ADDRESS ENABLE
	RE	READ ENABLE
	RE	ROTARY ERASE HEAD
	RERASE	ROTARY ERASE HEAD
	RST	RESET
	RSTR	RESET READ
	RSTW	RESET WRITE
S	S/S	START/STOP
	SBO	SERIAL OUTPUT
	SBD	SERIAL DATA
	SCLK	SERIAL CLOCK
	SDET	S-VHS DETECT
	SH/IRIS	SHUTTER/IRIS SW
	STAB	S-VHS TAB SWITCH
	SUB CNT	SUB CONTROL (SHUTTER SPEED)
T	TL	TORQUE LIMIT
	TRFIX	TRACKING FIX
	TRP	TRAP
U	U/V SELCT	R-Y/B-Y SELECT SIGNAL
	UVSEL	R-Y/B-Y SELECT SIGNAL
V	V1~4	V.CCD DRIVE PULSE
	VCO	VOLTAGE CONTROL OSCILLTOR
	VCTRL or VCTR	ΦVOLTAGE CHARGE CONTROL
	VD	VERTICAL DRIVE PULSE
	VDREC	VIDEO DELAYED REC
	VIN	VIDEO IN (ANALOGUE)
	VITC	VERTICAL INTERVAL TIME CODE
	VMD1~3	VELOCITY MODE DATA (SHUTTER)
	VORP	VIDEO OVERLAP
	VRB	VOLTAGE REFERENCE BOTTOM (1.3V)
	VREF1R3V	REFERENCE VOLTAGE 1.3v
	VREF3R3V	REFERENCE VOLTAGE 3.3v
	VREFH	REFERENCE VOLTAGE HIGH SIDE
	VREFL	REFERENCE VOLTAGE LOW SIDE
	VRI	REFERENCE VOLTAGE INPUT
	VRO	REFERENCE VOLTAGE OUTPUT
	VRO	REFEREMCE VOLTAGE OUTPUT
	VRT	VOLTAGE REFERENCE TOP (3.3V)
	VSS	VERTICAL SYNC SIGNAL
W	WAD or WAE	WRITE ADDRESS ENABLE
	WE	WRITE ENABLE
	WHD	WIDE HOLIZONTAL DRIVE PULSE
Y	Y 0~7	8BIT LUMINANCE DIGITAL SIGNAL
	YNC	NOISE CANCELER (LUMINANCE)
	YNR	NOISE REDUCTION (LUMINANCE)
Z	Z ENC	ZOOM ENCODER
	Z-MIC	ZOOM MIC
	ZENC1~4	ZOOM ENCODER
	ZMT	ZOOM MOTOR TELE SIDE
	ZMT(+)/(-)	ZOOM MOTOR (+)/(-)
	ZMW	ZOOM MOTOR WIDE SIDE
Φ	ϕH1~2	H.CCD DRIVE PULSE
	ϕR	RESET PULSE
	ϕV1~4	V.CCD DRIVE PULSE

3-2. OVERALL BLOCK DIAGRAM

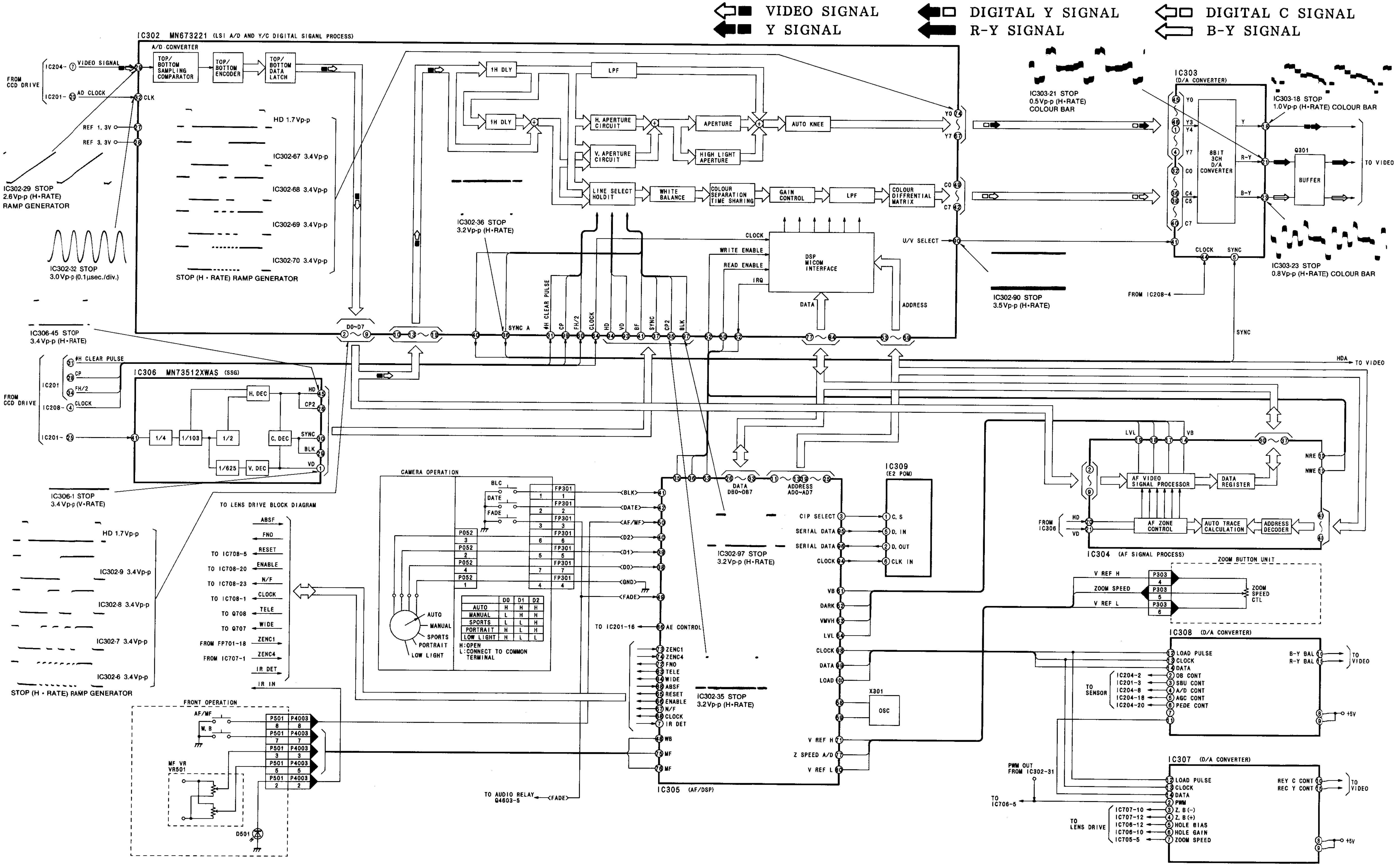


(FRONT OPERATION)
AF :MFVR
DSP:WB, AF/MF
(CAMERA OPERATION)
DSP:AE DIAL
BLC,
DATE/TIME
LENS DRIVE
(AF)
(EVR)
(EXT 5P)
IC6002
S3500BS
(A, DATE)
IC6003
HJ6462
(OSD)
22
3 VD
SERIAL DATA
(AF/DSP◄►EVR, EXT5P)
53
75, 76, 48, 50
41, 42
MOTER CTL SIGNAL
(RESET, ENABLE, CLK, CW/CCW)
65~68
60
93
95
98
SERIAL DATA
(DSP◄►E2PROM)
1, 5, 20, 23
IC708
TB6512AF
(MOTER DRIVE)
9, 10, 14, 16
IC304
TC9074F
(AF)
VD/HD
CLK
20, 21
IC305
MN1864002M2B
(AF/DSP)
VD/HD
51, 85
SERIAL DATA
(AF◄►DAC)
13
5
IC307/308
M62353GP
(D/A)
IC309
X25040S
(E2PROM)
RESET 47
IC6001
MN6755324
(SYSTEM CONTROL & SERVO)
2~9
8BIT DATA
2~9
10,
13~19
90
UVSEL
41
LENS'
CCD
(1/4" 510H)
IC204
(CDS/AGC)
(A/D)
IC302
MN673221
(DSP)
ADCLK
CLK
HCLR
VD /HD
42~49,
67~74
8BIT Y/C DATA
1~4, 45~48,
32~40
IC303
MN65702H
(D/A)
CLK
18 Y
21 R-Y
23 B-Y
32
64
35,
37,
41,
97
91
93, 94
44
40, 41,
45, 46
IC201
(V DRIVE)
VTR BLOCK
IC201
(CG)
31 HCLR
20 ADCLK/DICLK
33 VD
25 FCK
IC306
MN73512XWAS
(SSG)
41 FCK
28, 29, 30
SYNC/BLK/BF/CP2
1, 45
VD/HD

3-3. SENSOR BLOCK DIAGRAM

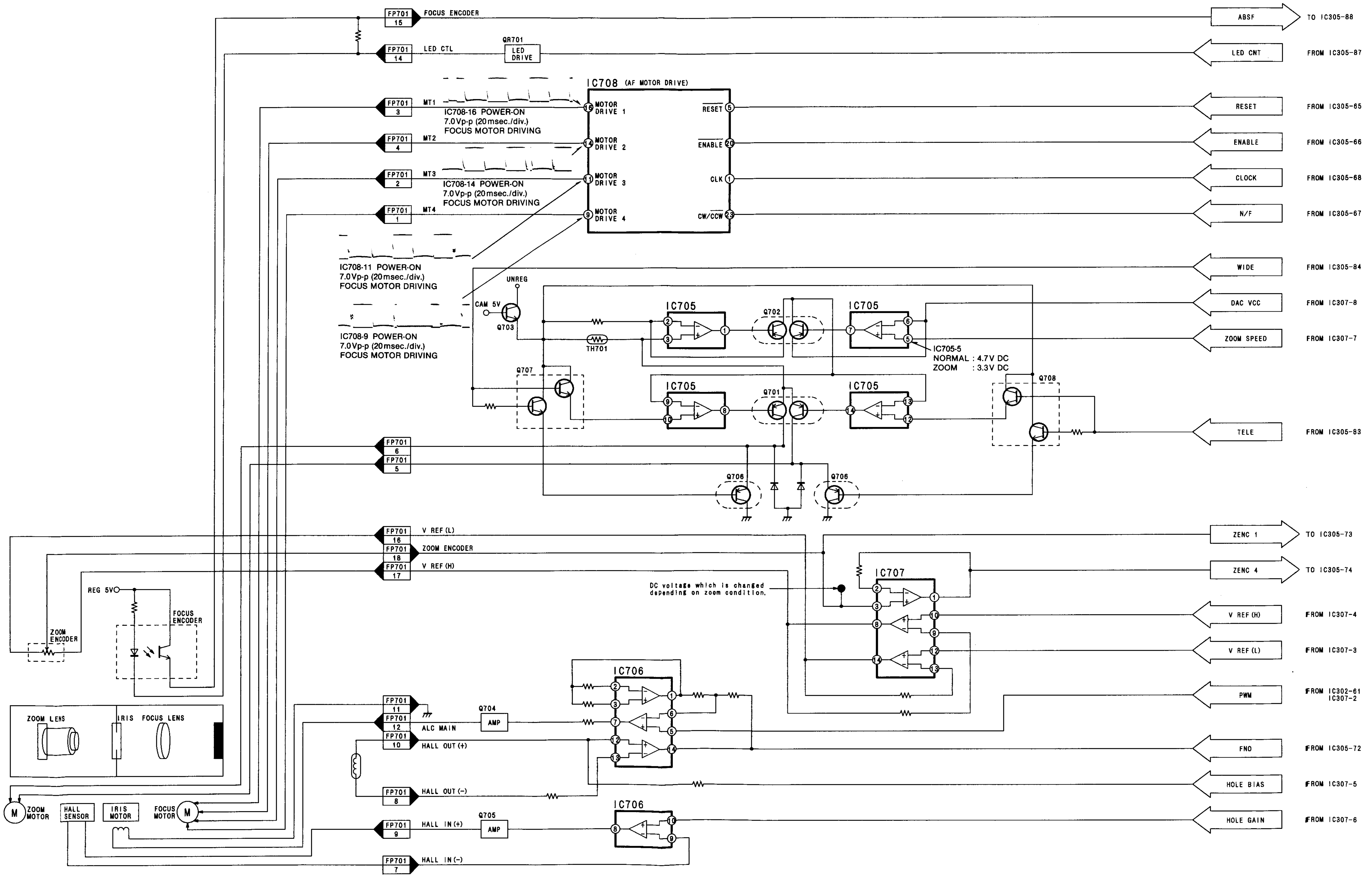

VIDEO SIGNAL
CCD ASS'Y
LIGHT
CCD
CCD IMAGE SENSOR
RESET
H1
H2
V4
V3
V2
V1
-8V
+15V
B291
B201
B201-10 STOP
6.4V DC
FROM EVR
B302-19
IC201-41 STOP
7.0Vp-p (H•RATE)
IC201-40 STOP
7.0Vp-p (H•RATE)
IC201-46 STOP
7.0Vp-p (H•RATE)
IC201-45 STOP
8.0Vp-p (H•RATE)
Q291
BUFFER
B201-12 STOP
1.0Vp-p (H•RATE) GRAY SCALE
B201-8 STOP
8.8Vp-p (H•RATE)
Q211
Q210
Q209
IC201
(CCD PULSE GEN. & DRIVE)
SUB
SUB OUT
-8V (PT)
15V
VCC (3. 5V)
VDD (3. 5V)
18V
ϕR PULSE
SUB CONT
IC308-③
VD
HD
FCK
PC OB
FH/2
ϕH
CLEAR PULSE
AE CNT
PRE BLK
(CDS) SP1
(CDS) SP2
CLK1
1/2
X201
9. 656MHz
REF. OSC.
IC207
C201
PROCESS
IC306
(SYNC SIGNAL GENE.)
CLK
IC302-㊴
IC302-㊵
IC302-㊶
IC305-㊱
(SHUTTER SPEED)
TO PROCESS
IC201-33 STOP
3.4Vp-p (V•RATE)
IC201-32 STOP
3.4Vp-p (H•RATE)
IC201-28 STOP
3.4Vp-p (H•RATE)
IC201-34 STOP
3.4Vp-p (H•RATE)
IC201-31 STOP
3.4Vp-p (H•RATE)
IC201-26 STOP
3.4Vp-p (H•RATE)
IC201-25 STOP
5.0Vp-p (0.1μsec./div.)
IC206
B201-7 STOP
5.0Vp-p (0.1μsec./div.)
B201-9 STOP
9.0Vp-p (H•RATE)
CDS
TO EVR (B302-5)
IC201-30 STOP
4.8Vp-p (0.1μsec./div.)
IC201-37 STOP
4.8Vp-p (0.1μsec./div.)
IC204-24 STOP
3.4Vp-p (H • RATE)
PRE-VIDEO SIGNAL
IC302
D/A
Y/C PROCESS
IC203
(S/H)
DSP1
DSP2
SAMPLING HOLD
9dB
SUB AMP
FL201
LPF
Q204
BUF
IC204
(AGC, GAMMA)
CLAMP
PEDESTAL PRE-SET
G. C1
DL
γ
γ. CONT
P. SEPA CPOB
P. SEPA CP2
V. REF4 1. 8V
V. REF2 3. 3V
V. REF1 1. 3V
V. REF3 1. 3~1. 6V
PRI BLK
G. C
DC CONT
LENS DRIVE
IC201 ㉘
IC302-㉘ (A/D REF V.)
IC302-㉗ (A/D REF V.)
(E1)
(E2)
(E3)
IC308
(D/A CONV.)
A/D CNT
OB CNT
PEDE CNT
AGC CNT
IC305
AF DSP μCOM
IC309
EEPROM
IC203-3 STOP
0.6Vp-p (H • RATE) GRAY SCALE
IC203-1 STOP
1.0Vp-p (H•RATE) GRAY SCALE
IC204-7 STOP
1.3Vp-p (H • RATE) GRAY SCALE

3-4. PROCESS BLOCK DIAGRAM


VIDEO SIGNAL
Y SIGNAL
DIGITAL Y SIGNAL
R-Y SIGNAL
DIGITAL C SIGNAL
B-Y SIGNAL
IC302 MN673221 (LSI A/D AND Y/C DIGITAL SIGANL PROCESS)
A/D CONVERTER
TOP/ BOTTOM SAMPLING COMPARATOR
TOP/ BOTTOM ENCODER
TOP/ BOTTOM DATA LATCH
FROM CCD DRIVE
IC204-7 VIDEO SIGNAL
IC201-20 AD CLOCK
REF 1.3V
REF 3.3V
1H DLY
LPF
H. APERTURE CIRCUIT
V. APERTURE CIRCUIT
APERTURE
HIGH LIGHT APERTURE
AUTO KNEE
LINE SELECT HOLDIT
WHITE BALANCE
COLOUR SEPARATION TIME SHARING
GAIN CONTROL
COLOUR DIFFERENTIAL MATRIX
DSP MICOM INTERFACE
CLOCK
WRITE ENABLE
READ ENABLE
IRQ
DATA
ADDRESS
U/V SELECT
HD 1.7Vp-p
IC302-67 3.4Vp-p
IC302-68 3.4Vp-p
IC302-69 3.4Vp-p
IC302-70 3.4Vp-p
STOP (H • RATE) RAMP GENERATOR
IC302-29 STOP 2.6Vp-p (H•RATE) RAMP GENERATOR
IC302-32 STOP 3.0Vp-p (0.1μsec./div.)
IC302-36 STOP 3.2Vp-p (H•RATE)
IC302-90 STOP 3.5Vp-p (H•RATE)
IC306-45 STOP 3.4Vp-p (H•RATE)
IC306-1 STOP 3.4Vp-p (V•RATE)
D0~D7
SYNC A
ΦH CLEAR PULSE
CP
FH/2
CLOCK
HD
VD
BF
SYNC
CP2
BLK
IC303 (D/A CONVERTER)
8BIT 3CH D/A CONVERTER
IC303-21 STOP 0.5Vp-p (H•RATE) COLOUR BAR
IC303-18 STOP 1.0Vp-p (H•RATE) COLOUR BAR
IC303-23 STOP 0.8Vp-p (H•RATE) COLOUR BAR
Q301 BUFFER
TO VIDEO
FROM IC208-4
IC306 MN73512XWAS (SSG)
H. DEC
C. DEC
V. DEC
1/4
1/103
1/2
1/625
IC201
IC208-4
IC201-25
HDA
IC304 (AF SIGNAL PROCESS)
AF VIDEO SIGNAL PROCESSOR
DATA REGISTER
AF ZONE CONTROL
AUTO TRACE CALCULATION
ADDRESS DECODER
LVL
VB
NRE
NWE
FROM IC306
HD 1.7Vp-p
IC302-9 3.4Vp-p
IC302-8 3.4Vp-p
IC302-7 3.4Vp-p
IC302-6 3.4Vp-p
STOP (H • RATE) RAMP GENERATOR
TO LENS DRIVE BLOCK DIAGRAM
ABSF
FNO
TO IC708-5 RESET
TO IC708-20 ENABLE
TO IC708-23 N/F
TO IC708-1 CLOCK
TO Q708 TELE
TO Q707 WIDE
FROM FP701-18 ZENC1
FROM IC707-1 ZENC4
IR DET
IR IN
CAMERA OPERATION
BLC
DATE
FADE
P052
FP301
AUTO
MANUAL
SPORTS
PORTRAIT
LOW LIGHT
H:OPEN
L:CONNECT TO COMMON TERMINAL
TO AUDIO RELAY Q4603-5
FRONT OPERATION
AF/MF
W. B
MF VR VR501
D501
P501
P4003
IC305 (AF/DSP)
DATA DB0~DB7
ADDRESS AD0~AD7
CIP SELECT
SERIAL DATA
CLOCK
TO IC201-16 AE CONTROL
VB
DARK
VMVH
LVL
LOAD
X301 OSC
V REF H
Z SPEED A/D
V REF L
IC302-97 STOP 3.2Vp-p (H•RATE)
IC302-35 STOP 3.2Vp-p (H•RATE)
IC309 (E2 POM)
C. S
D. IN
D. OUT
CLK IN
ZOOM BUTTON UNIT
ZOOM SPEED
P303
ZOOM SPEED CTL
IC308 (D/A CONVERTER)
LOAD PULSE
PWM OUT FROM IC302-31
TO IC706-5
TO SENSOR
OB CONT
SBU CONT
A/D CONT
AGC CONT
PEDE CONT
B-Y BAL
R-Y BAL
+5V
IC307 (D/A CONVERTER)
PWM
Z. B (-)
Z. B (+)
HOLE BIAS
HOLE GAIN
ZOOM SPEED
TO LENS DRIVE
REC C CONT
REC Y CONT

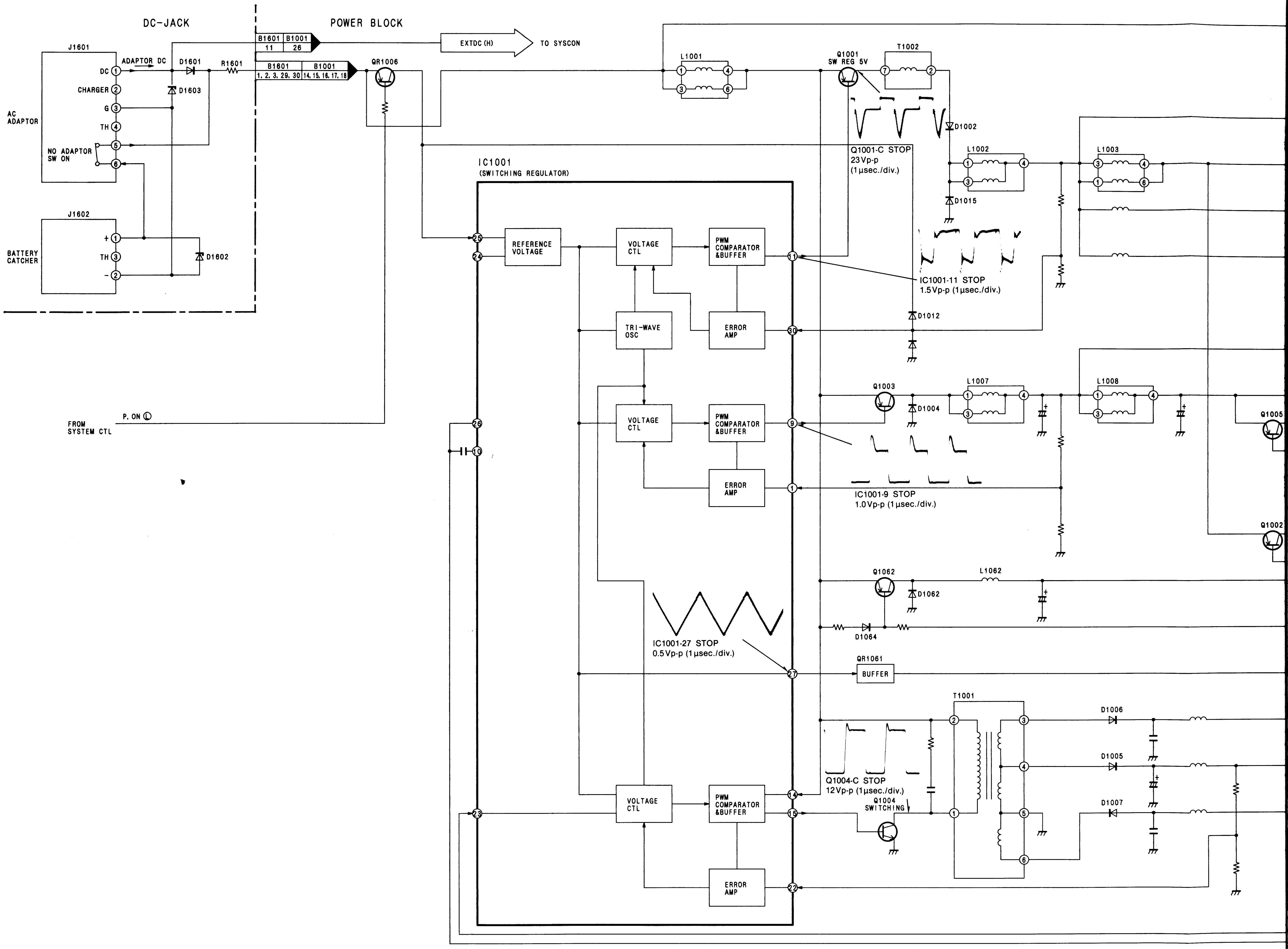
	D0	D1	D2
AUTO	H	H	H
MANUAL	L	H	H
SPORTS	L	L	H
PORTRAIT	H	L	H
LOW LIGHT	H	L	L

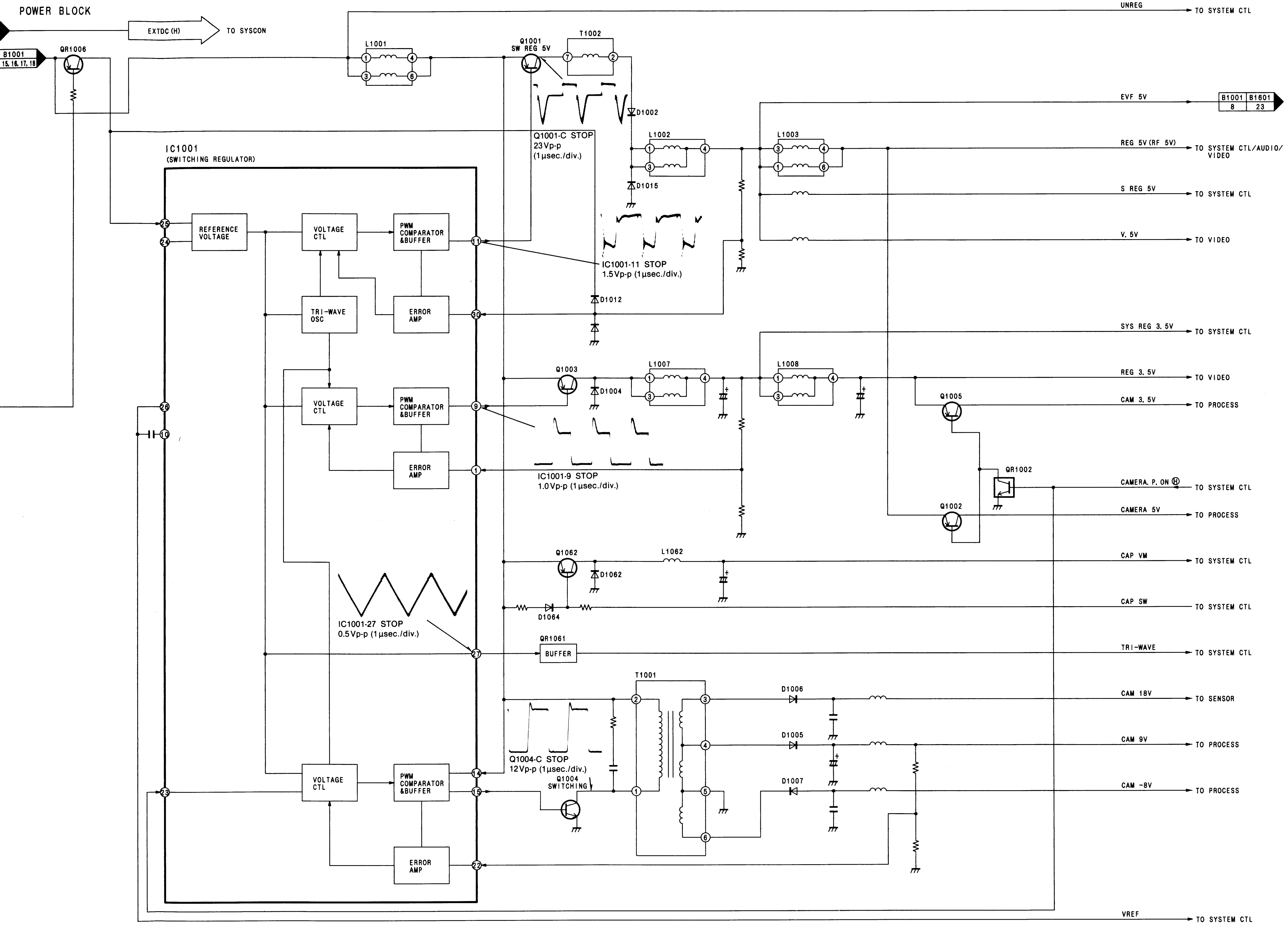
3-5. LENS DRIVE BLOCK DIAGRAM


FP701 15
FOCUS ENCODER
ABSF
TO IC305-88
FP701 14
LED CTL
QR701
LED DRIVE
LED CNT
FROM IC305-87
IC708 (AF MOTOR DRIVE)
FP701 3
MT1
FP701 4
MT2
FP701 2
MT3
FP701 1
MT4
MOTOR DRIVE 1
MOTOR DRIVE 2
MOTOR DRIVE 3
MOTOR DRIVE 4
RESET
ENABLE
CLK
CW/CCW
RESET
FROM IC305-65
ENABLE
FROM IC305-66
CLOCK
FROM IC305-68
N/F
FROM IC305-67
IC708-16 POWER-ON
7.0Vp-p (20msec./div.)
FOCUS MOTOR DRIVING
IC708-14 POWER-ON
7.0Vp-p (20msec./div.)
FOCUS MOTOR DRIVING
IC708-11 POWER-ON
7.0Vp-p (20msec./div.)
FOCUS MOTOR DRIVING
IC708-9 POWER-ON
7.0Vp-p (20msec./div.)
FOCUS MOTOR DRIVING
WIDE
FROM IC305-84
UNREG
CAM 5V
Q703
IC705
Q702
IC705
DAC VCC
FROM IC307-8
ZOOM SPEED
FROM IC307-7
TH701
IC705-5
NORMAL : 4.7V DC
ZOOM : 3.3V DC
Q707
IC705
Q701
IC705
Q708
TELE
FROM IC305-83
FP701 6
FP701 5
Q706
Q706
FP701 16
V REF (L)
FP701 18
ZOOM ENCODER
FP701 17
V REF (H)
ZENC 1
TO IC305-73
ZENC 4
TO IC305-74
IC707
DC voltage which is changed depending on zoom condition.
REG 5V
FOCUS ENCODER
ZOOM ENCODER
V REF (H)
FROM IC307-4
V REF (L)
FROM IC307-3
IC706
PWM
FROM IC302-61 IC307-2
ZOOM LENS
IRIS
FOCUS LENS
FP701 11
FP701 12
ALC MAIN
Q704
AMP
FP701 10
HALL OUT (+)
FNO
FROM IC305-72
HOLE BIAS
FROM IC307-5
FP701 8
HALL OUT (−)
IC706
HOLE GAIN
FROM IC307-6
M
ZOOM MOTOR
HALL SENSOR
IRIS MOTOR
FOCUS MOTOR
M
FP701 9
HALL IN (+)
Q705
AMP
FP701 7
HALL IN (−)

Back Page:
PROCESS Section

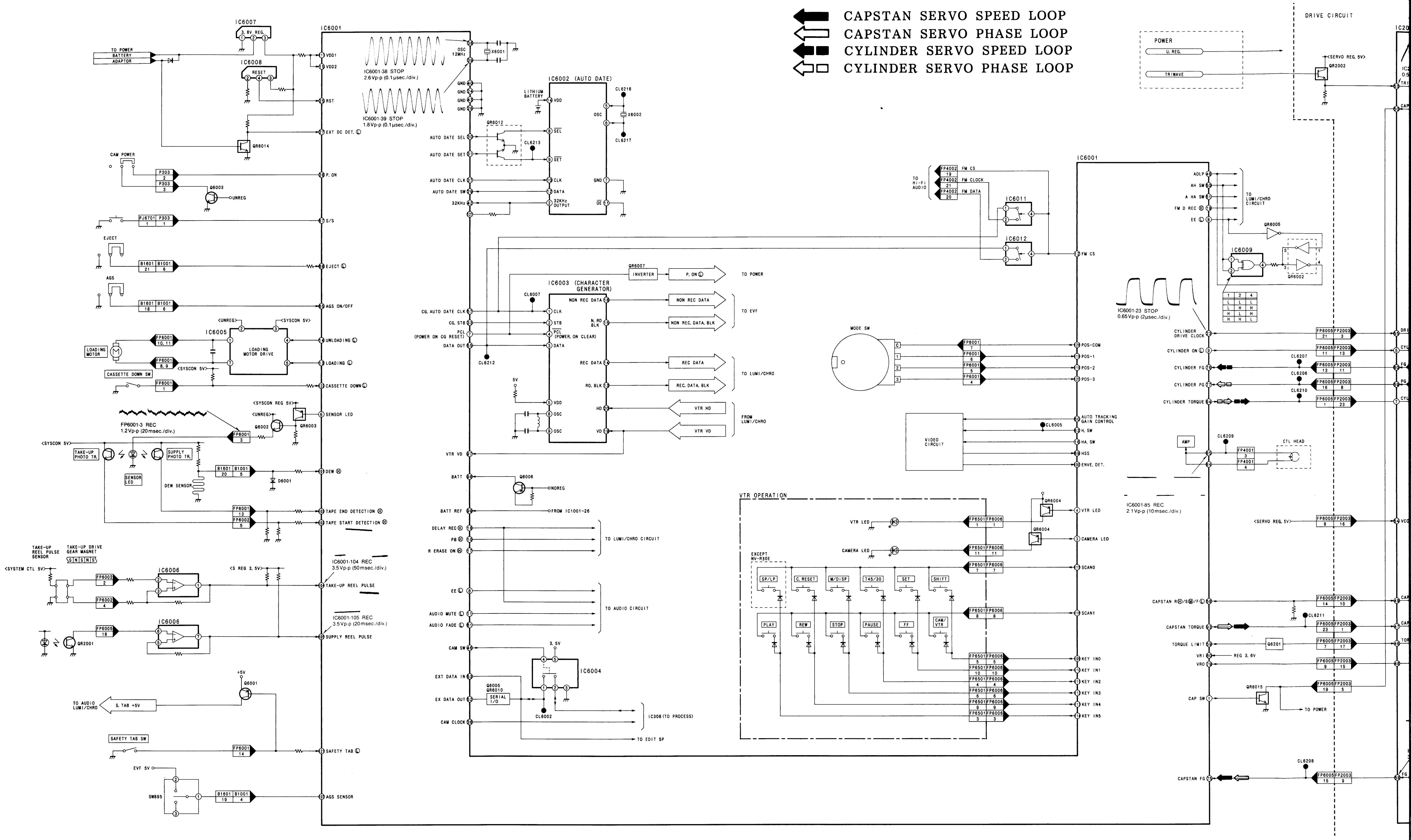
3-6. POWER BLOCK DIAGRAM

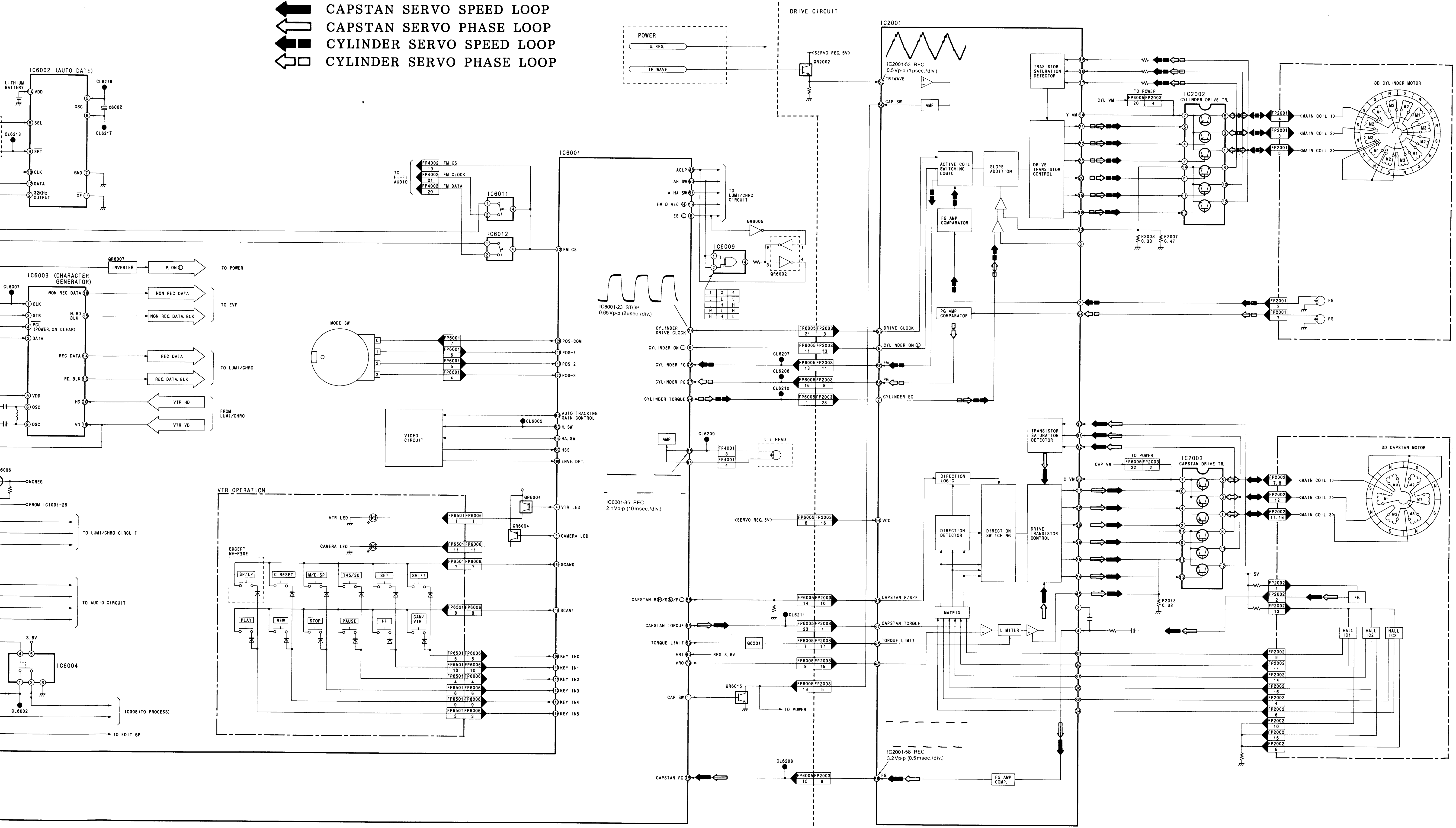

DC-JACK
POWER BLOCK
J1601
AC ADAPTOR
DC ①
CHARGER ②
G ③
TH ④
NO ADAPTOR SW ON
⑤
⑥
ADAPTOR DC
D1601
R1601
D1603
J1602
BATTERY CATCHER
+ ①
TH ③
- ②
D1602
B1601 11
B1001 26
B1601 1, 2, 3, 29, 30
B1001 14, 15, 16, 17, 18
EXTDC (H)
TO SYSCON
QR1006
FROM SYSTEM CTL
P. ON Ⓛ
IC1001
(SWITCHING REGULATOR)
REFERENCE VOLTAGE
VOLTAGE CTL
PWM COMPARATOR &BUFFER
TRI-WAVE OSC
ERROR AMP
VOLTAGE CTL
PWM COMPARATOR &BUFFER
ERROR AMP
VOLTAGE CTL
PWM COMPARATOR &BUFFER
ERROR AMP
25
24
26
10
23
11
30
9
1
27
14
15
22
IC1001-27 STOP
0.5Vp-p (1µsec./div.)
L1001
①
④
③
⑥
Q1001 SW REG 5V
T1002
⑦
②
D1002
Q1001-C STOP
23Vp-p
(1µsec./div.)
L1002
①
③
④
D1015
L1003
③
①
④
⑥
IC1001-11 STOP
1.5Vp-p (1µsec./div.)
D1012
Q1003
D1004
L1007
①
③
④
L1008
①
③
④
Q1005
IC1001-9 STOP
1.0Vp-p (1µsec./div.)
Q1002
Q1062
D1062
L1062
D1064
QR1061
BUFFER
T1001
②
③
④
①
⑤
⑥
D1006
D1005
D1007
Q1004-C STOP
12Vp-p (1µsec./div.)
Q1004 SWITCHING


POWER BLOCK
EXTDC (H)
TO SYSCON
B1001
15, 16, 17, 18
QR1006
L1001
Q1001
SW REG 5V
T1002
D1002
Q1001-C STOP
23Vp-p
(1μsec./div.)
IC1001
(SWITCHING REGULATOR)
REFERENCE VOLTAGE
VOLTAGE CTL
PWM COMPARATOR &BUFFER
TRI-WAVE OSC
ERROR AMP
L1002
D1015
L1003
IC1001-11 STOP
1.5Vp-p (1μsec./div.)
D1012
UNREG
TO SYSTEM CTL
EVF 5V
B1001 8
B1601 23
REG 5V(RF 5V)
TO SYSTEM CTL/AUDIO/VIDEO
S REG 5V
TO SYSTEM CTL
V. 5V
TO VIDEO
SYS REG 3. 5V
TO SYSTEM CTL
Q1003
D1004
L1007
L1008
REG 3. 5V
TO VIDEO
Q1005
CAM 3. 5V
TO PROCESS
IC1001-9 STOP
1.0Vp-p (1μsec./div.)
QR1002
CAMERA. P. ON Ⓗ
TO SYSTEM CTL
Q1002
CAMERA 5V
TO PROCESS
Q1062
D1062
L1062
CAP VM
TO SYSTEM CTL
D1064
CAP SW
TO SYSTEM CTL
IC1001-27 STOP
0.5Vp-p (1μsec./div.)
QR1061
BUFFER
TRI-WAVE
TO SYSTEM CTL
T1001
D1006
CAM 18V
TO SENSOR
D1005
CAM 9V
TO PROCESS
Q1004-C STOP
12Vp-p (1μsec./div.)
Q1004
SWITCHING
D1007
CAM -8V
TO PROCESS
VREF
TO SYSTEM CTL

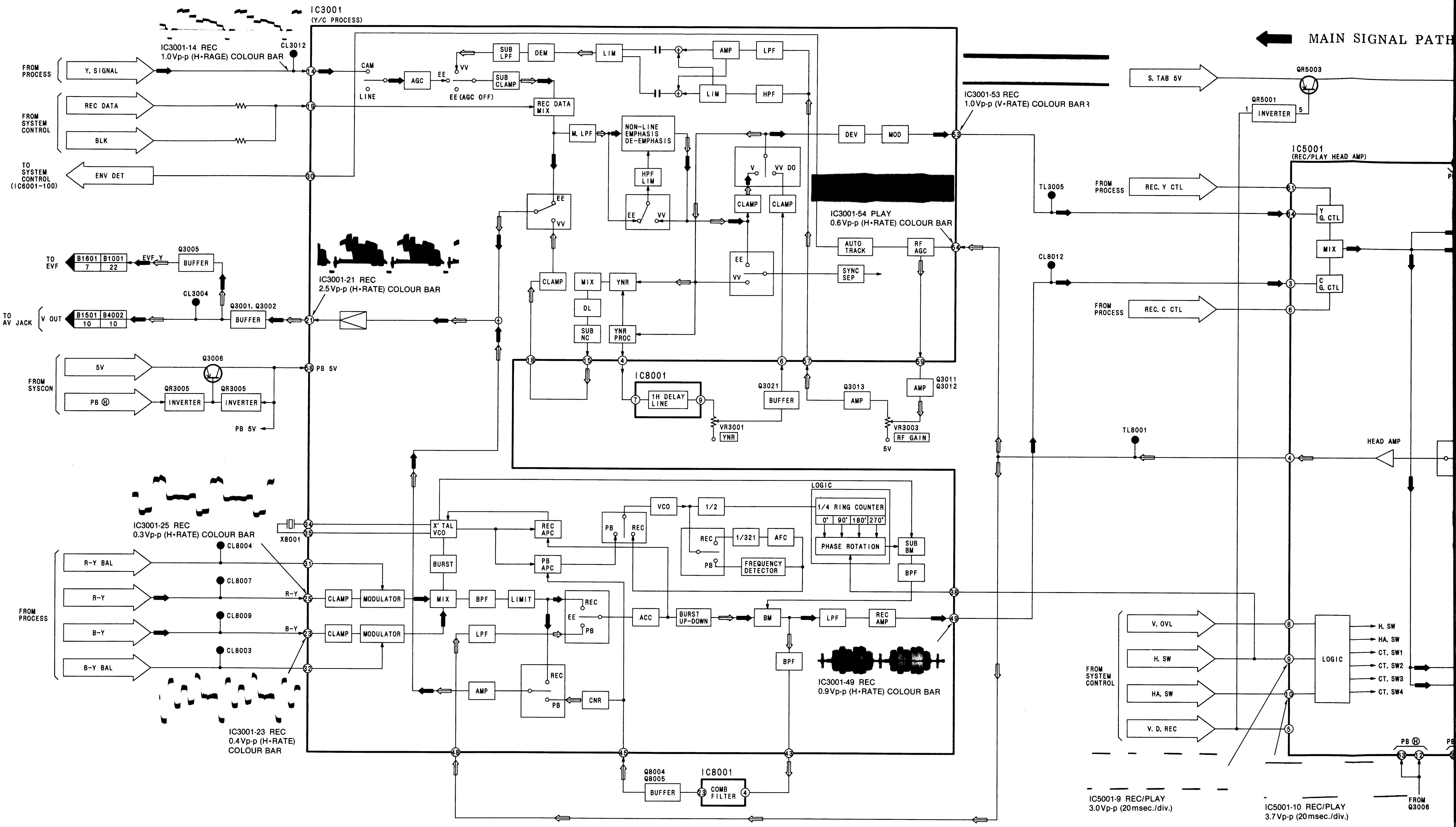
Next Page:
SYSTEM CTL & SERVO Section

3-7. SYSTEM CONTROL & SERVO BLOCK DIAGRAM


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
DRIVE CIRCUIT
POWER
U. REG.
TRIWAVE
IC6001
IC6007
3. 8V REG.
IC6008
RESET
TO POWER BATTERY ADAPTOR
QR6014
CAM POWER
Q6003
UNREG
EJECT
AGS
IC6005
LOADING MOTOR DRIVE
LOADING MOTOR
CASSETTE DOWN SW
FP6001-3 REC
1.2Vp-p (20msec./div.)
QR6002
QR6003
TAKE-UP PHOTO TR.
SUPPLY PHOTO TR.
SENSOR LED
DEW SENSOR
D6001
TAKE-UP REEL PULSE SENSOR
TAKE-UP DRIVE GEAR MAGNET
IC6006
QR2001
TO AUDIO LUMI/CHRO
S. TAB +5V
Q6001
SAFETY TAB SW
EVF 5V
SW895
VDD1
VDD2
RST
EXT DC DET.
P. ON
S/S
EJECT
AGS ON/OFF
UNLOADING
LOADING
CASSETTE DOWN
SENSOR LED
DEW
TAPE END DETECTION
TAPE START DETECTION
IC6001-104 REC
3.5Vp-p (50msec./div.)
TAKE-UP REEL PULSE
IC6001-105 REC
3.5Vp-p (20msec./div.)
SUPPLY REEL PULSE
SAFETY TAB
AGS SENSOR
IC6001-38 STOP
2.6Vp-p (0.1μsec./div.)
IC6001-39 STOP
1.8Vp-p (0.1μsec./div.)
OSC 12MHz
X6001
IC6002 (AUTO DATE)
LITHIUM BATTERY
QR6012
CL6213
AUTO DATE SEL
AUTO DATE SET
AUTO DATE CLK
AUTO DATE SW
32KHz
32KHz OUTPUT
X6002
CL6216
CL6217
QR6007
INVERTER
P. ON
TO POWER
IC6003 (CHARACTER GENERATOR)
CL6007
CG. AUTO DATE CLK
CG. STB
PCL (POWER ON CG RESET)
DATA OUT
NON REC DATA
N. RD BLK
REC DATA
RD. BLK
TO EVF
NON REC. DATA, BLK
REC. DATA, BLK
TO LUMI/CHRO
VTR HD
VTR VD
FROM LUMI/CHRO
CL6212
VTR VD
BATT
Q6006
NOREG
BATT REF
FROM IC1001-26
DELAY REC
PB
R ERASE ON
TO LUMI/CHRO CIRCUIT
EE
AUDIO MUTE
AUDIO FADE
TO AUDIO CIRCUIT
CAM SW
EXT DATA IN
EX DATA OUT
CAM CLOCK
IC6004
Q6005 Q6010
SERIAL I/O
CL6002
IC308 (TO PROCESS)
TO EDIT 5P
TO HI-FI AUDIO
FM CS
FM CLOCK
FM DATA
IC6011
IC6012
MODE SW
POS-COM
POS-1
POS-2
POS-3
VIDEO CIRCUIT
CL6005
AUTO TRACKING GAIN CONTROL
H. SW
HA. SW
HSS
ENVE. DET.
VTR OPERATION
VTR LED
CAMERA LED
QR6004
EXCEPT NV-R30E
SP/LP
C. RESET
M/DISP
T45/30
SET
SHIFT
PLAY
REW
STOP
PAUSE
FF
CAM/VTR
SCAN0
SCAN1
KEY IN0
KEY IN1
KEY IN2
KEY IN3
KEY IN4
KEY IN5
AOLP
AH SW
A HA SW
FM D REC
EE
TO LUMI/CHRO CIRCUIT
QR6005
IC6009
QR6002
IC6001-23 STOP
0.65Vp-p (2μsec./div.)
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
CYLINDER PG
CYLINDER TORQUE
CL6207
CL6206
CL6210
AMP
CL6209
CTL HEAD
IC6001-85 REC
2.1Vp-p (10msec./div.)
<SERVO REG. 5V>
QR2002
CAPSTAN R/S/F
CL6211
CAPSTAN TORQUE
TORQUE LIMIT
Q6201
VRI
VRO
REG 3. 6V
CAP SW
QR6015
TO POWER
CL6208
CAPSTAN FG


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
IC6002 (AUTO DATE)
LITHIUM BATTERY
VDD
OSC
SEL
SET
CLK
DATA
32KHz OUTPUT
GND
OE
CL6216
X6002
CL6217
CL6213
POWER
U. REG.
TRIWAVE
DRIVE CIRCUIT
<SERVO REG. 5V>
QR2002
IC2001
IC2001-53 REC
0.5 Vp-p (1μsec./div.)
TRIWAVE
CAP SW
AMP
TRASISTOR SATURATION DETECTOR
TO POWER
CYL VM
FP6005 FP2003
IC2002
CYLINDER DRIVE TR.
DD CYLINDER MOTOR
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
FP2001
Y VM
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
DRIVE TRANSISTOR CONTROL
FG AMP COMPARATOR
PG AMP COMPARATOR
R2008 0.33
R2007 0.47
FG
PG
TO HI-FI AUDIO
FP4002
FM CS
FM CLOCK
FM DATA
IC6011
IC6012
IC6001
AOLP
AH SW
A HA SW
FM D REC
EE
TO LUMI/CHRO CIRCUIT
QR6005
IC6009
QR6002
QR6007
INVERTER
P. ON
TO POWER
IC6003 (CHARACTER GENERATOR)
CL6007
NON REC DATA
STB
N. RD BLK
PCL (POWER, ON CLEAR)
REC DATA
RD. BLK
VDD
OSC
HD
VD
NON REC DATA
NON REC. DATA. BLK
TO EVF
REC DATA
REC. DATA. BLK
TO LUMI/CHRO
VTR HD
VTR VD
FROM LUMI/CHRO
MODE SW
FP6001
POS-COM
POS-1
POS-2
POS-3
IC6001-23 STOP
0.65 Vp-p (2μsec./div.)
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
CYLINDER PG
CYLINDER TORQUE
CL6207
CL6206
CL6210
DRIVE CLOCK
CYLINDER ON
CYLINDER EC
VIDEO CIRCUIT
AUTO TRACKING GAIN CONTROL
CL6005
H. SW
HA. SW
HSS
ENVE. DET.
AMP
CL6209
FP4001
CTL HEAD
IC6001-85 REC
2.1 Vp-p (10msec./div.)
TRANSISTOR SATURATION DETECTOR
TO POWER
CAP VM
IC2003
CAPSTAN DRIVE TR.
DD CAPSTAN MOTOR
C VM
DIRECTION LOGIC
DIRECTION DETECTOR
DIRECTION SWITCHING
DRIVE TRANSISTOR CONTROL
FP2002
MATRIX
LIMITER
R2013 0.33
5V
HALL IC1
HALL IC2
HALL IC3
NOREG
FROM IC1001-26
TO LUMI/CHRO CIRCUIT
TO AUDIO CIRCUIT
VTR OPERATION
QR6004
VTR LED
CAMERA LED
FP6501 FP6006
EXCEPT NV-R30E
SP/LP
C. RESET
M/DISP
T45/30
SET
SHIFT
PLAY
REW
STOP
PAUSE
FF
CAM/VTR
SCAN0
SCAN1
KEY IN0
KEY IN1
KEY IN2
KEY IN3
KEY IN4
KEY IN5
<SERVO REG. 5V>
VCC
3.5V
IC6004
CL6002
IC308 (TO PROCESS)
TO EDIT 5P
CAPSTAN R/S/F
CAPSTAN TORQUE
TORQUE LIMIT
VRI
VRO
REG 3.6V
Q6201
CL6211
CAP SW
QR6015
TO POWER
CAPSTAN FG
CL6208
IC2001-58 REC
3.2 Vp-p (0.5msec./div.)
FG AMP COMP.

3-8. LUMINANCE/CHROMINANCE & HEAD AMP BLOCK DIAGRAM



[redacted]

IC3001-14 REC
1.0Vp-p (H•RAGE) COLOUR BAR

IC3001-21 REC
2.5Vp-p (H•RATE) COLOUR BAR

IC3001-25 REC
0.3Vp-p (H•RATE) COLOUR BAR

IC3001-23 REC
0.4Vp-p (H•RATE)
COLOUR BAR

IC3001-53 REC
1.0Vp-p (V•RATE) COLOUR BAR

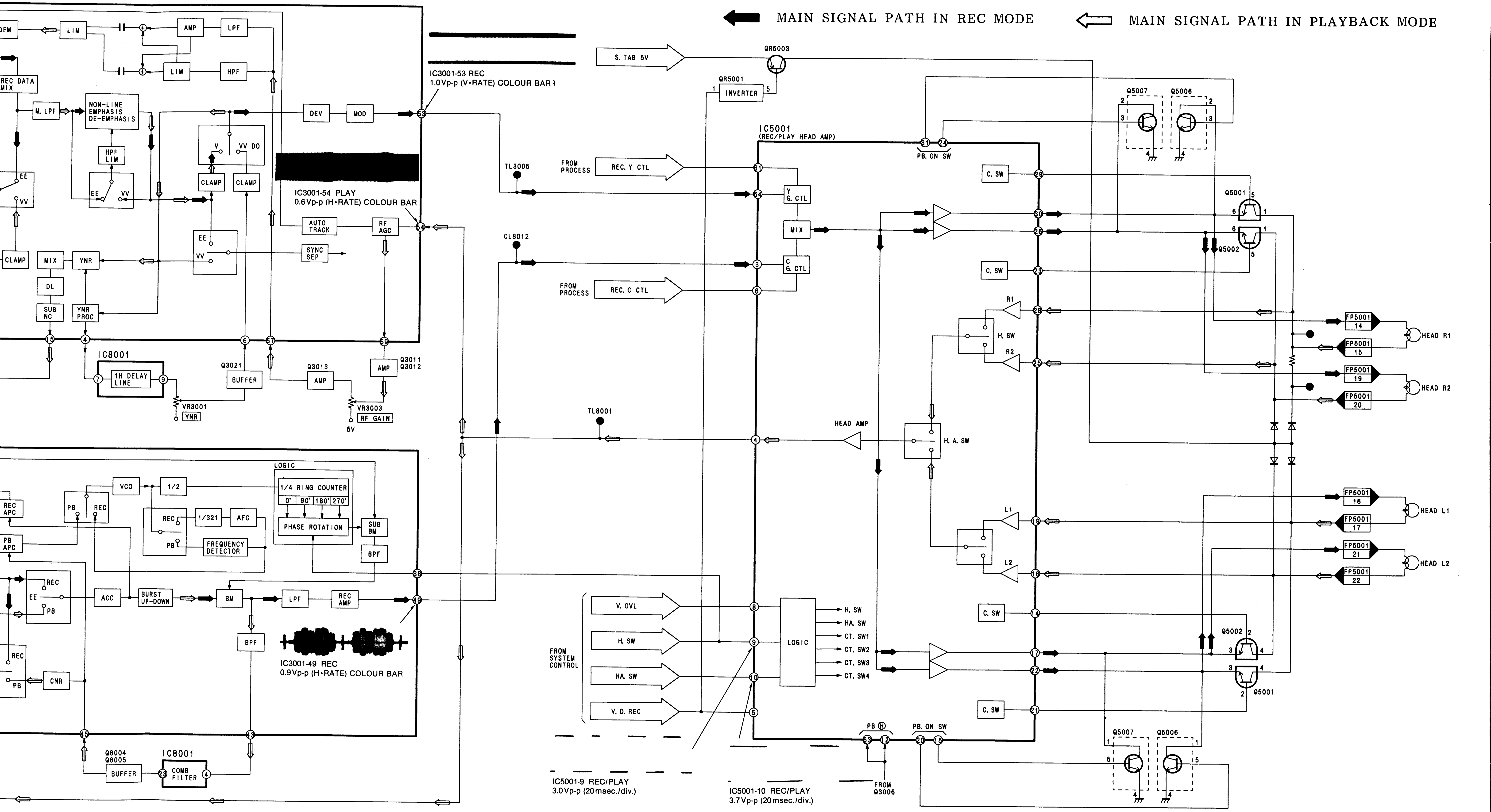
IC3001-54 PLAY
0.6Vp-p (H•RATE) COLOUR BAR

IC3001-49 REC
0.9Vp-p (H•RATE) COLOUR BAR

IC5001-9 REC/PLAY
3.0Vp-p (20msec./div.)

IC5001-10 REC/PLAY
3.7Vp-p (20msec./div.)

MAIN SIGNAL PATH
IC3001
(Y/C PROCESS)
FROM PROCESS
Y. SIGNAL
CL3012
FROM SYSTEM CONTROL
REC DATA
BLK
TO SYSTEM CONTROL (IC6001-100)
ENV DET
CAM
LINE
AGC
EE
VV
EE (AGC OFF)
SUB LPF
DEM
SUB CLAMP
REC DATA MIX
LIM
AMP
LPF
HPF
M. LPF
NON-LINE EMPHASIS DE-EMPHASIS
HPF LIM
DEV
MOD
VV DO
CLAMP
AUTO TRACK
RF AGC
SYNC SEP
MIX
YNR
DL
SUB NC
YNR PROC
TO EVF
B1601
B1001
7
22
EVF_Y
Q3005
BUFFER
CL3004
Q3001, Q3002
TO AV JACK
V OUT
B1501
B4002
10
10
FROM SYSCON
5V
PB Ⓗ
Q3006
QR3005
INVERTER
PB 5V
IC8001
1H DELAY LINE
VR3001
YNR
Q3021
Q3013
Q3011
Q3012
VR3003
RF GAIN
X8001
X' TAL VCO
BURST
REC APC
PB APC
VCO
1/2
REC
PB
1/321
AFC
FREQUENCY DETECTOR
LOGIC
1/4 RING COUNTER
0°
90°
180°
270°
PHASE ROTATION
SUB BM
BPF
R-Y BAL
R-Y
B-Y
B-Y BAL
CL8004
CL8007
CL8009
CL8003
CLAMP
MODULATOR
MIX
LIMIT
ACC
BURST UP-DOWN
BM
REC AMP
CNR
Q8004
Q8005
COMB FILTER
TL3005
CL8012
TL8001
S. TAB 5V
QR5003
QR5001
INVERTER
IC5001
(REC/PLAY HEAD AMP)
REC. Y CTL
Y G. CTL
C G. CTL
REC. C CTL
HEAD AMP
V. OVL
H. SW
HA. SW
V. D. REC
H. SW
HA. SW
CT. SW1
CT. SW2
CT. SW3
CT. SW4
FROM Q3006


MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

IC3001-53 REC
1.0Vp-p (V·RATE) COLOUR BAR

[redacted]

IC3001-54 PLAY
0.6Vp-p (H·RATE) COLOUR BAR

IC3001-49 REC
0.9Vp-p (H·RATE) COLOUR BAR

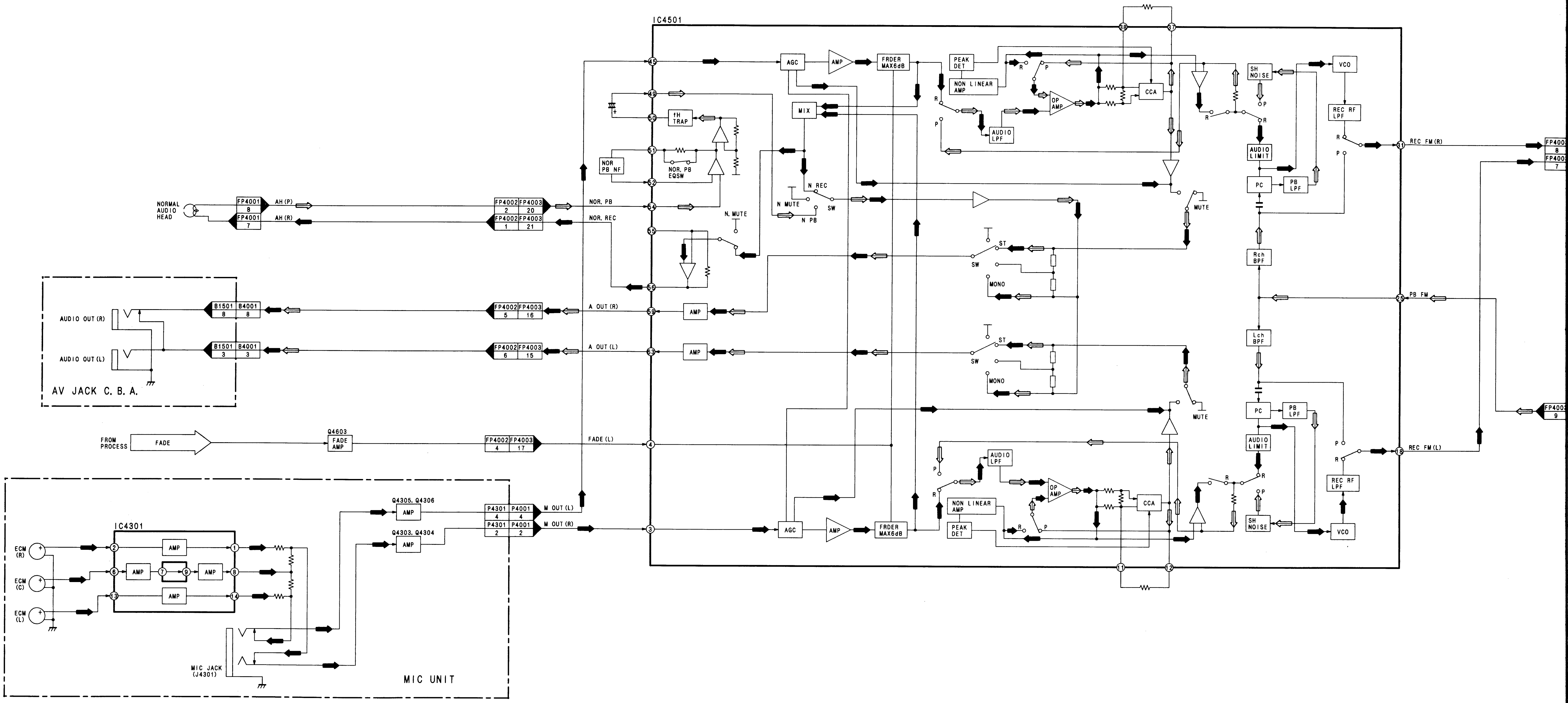
IC5001-9 REC/PLAY
3.0Vp-p (20msec./div.)

IC5001-10 REC/PLAY
3.7Vp-p (20msec./div.)

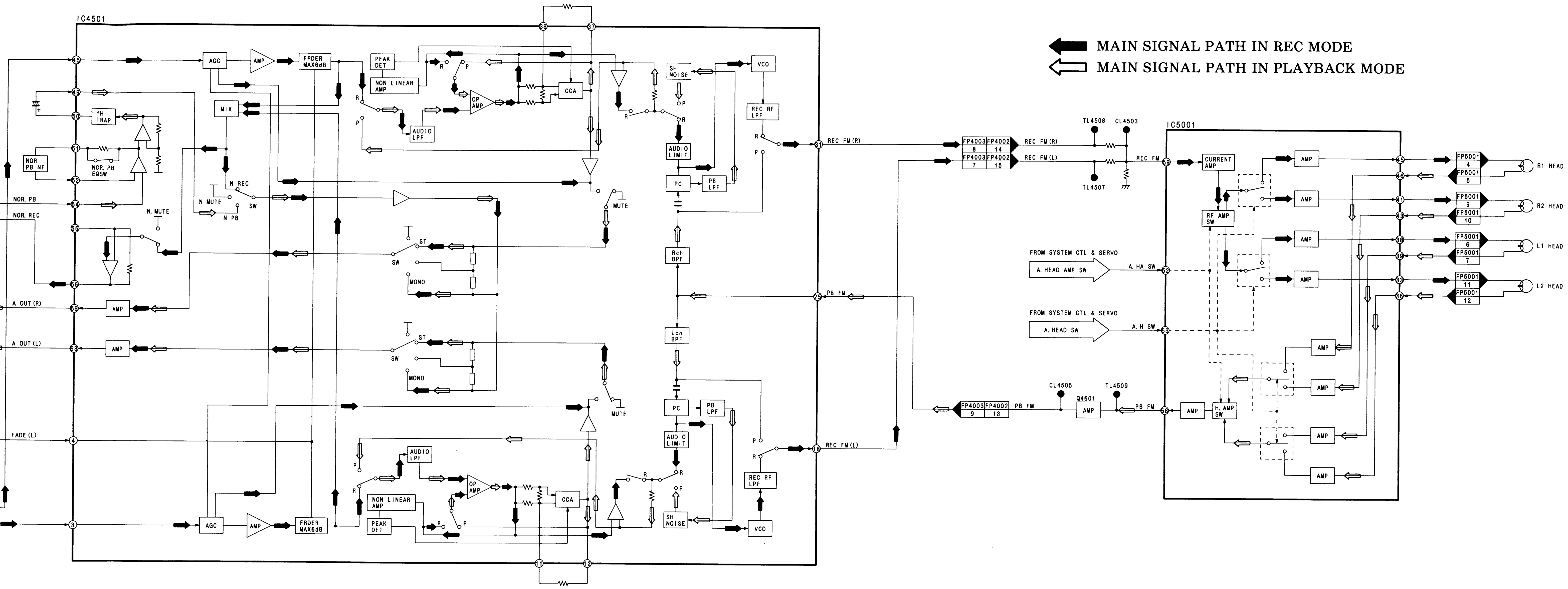
DEM
LIM
AMP
LPF
LIM
HPF
REC DATA MIX
M. LPF
NON-LINE EMPHASIS DE-EMPHASIS
HPF LIM
EE
VV
DEV
MOD
53
V
VV DO
CLAMP
CLAMP
AUTO TRACK
RF AGC
54
SYNC SEP
EE
VV
CLAMP
MIX
YNR
DL
SUB NC
YNR PROC
15
4
6
57
59
IC8001
7
1H DELAY LINE
9
VR3001
YNR
Q3021
BUFFER
Q3013
AMP
AMP
Q3011
Q3012
VR3003
RF GAIN
5V
LOGIC
VCO
1/2
1/4 RING COUNTER
0°
90°
180°
270°
PHASE ROTATION
SUB BM
BPF
REC APC
PB
REC
REC
1/321
AFC
PB APC
PB
FREQUENCY DETECTOR
38
REC
EE
PB
ACC
BURST UP-DOWN
BM
LPF
REC AMP
49
BPF
REC
PB
CNR
45
43
Q8004
Q8005
BUFFER
IC8001
23
COMB FILTER
4
S. TAB 5V
QR5003
QR5001
1
INVERTER
5
TL3005
FROM PROCESS
REC. Y CTL
CL8012
FROM PROCESS
REC. C CTL
TL8001
IC5001
(REC/PLAY HEAD AMP)
31
24
PB. ON SW
61
64
3
6
Y G. CTL
MIX
C G. CTL
4
HEAD AMP
H. A. SW
C. SW
29
30
26
C. SW
23
R1
28
H. SW
R2
25
L1
19
L2
16
Q5007
Q5006
2
3
4
2
3
4
Q5001
5
6
1
6
1
Q5002
5
FP5001 14
FP5001 15
HEAD R1
FP5001 19
FP5001 20
HEAD R2
FP5001 16
FP5001 17
HEAD L1
FP5001 21
FP5001 22
HEAD L2
V. OVL
H. SW
HA. SW
V. D. REC
FROM SYSTEM CONTROL
8
9
10
5
LOGIC
H. SW
HA. SW
CT. SW1
CT. SW2
CT. SW3
CT. SW4
C. SW
14
17
22
C. SW
21
Q5002
2
3
4
3
4
Q5001
2
PB Ⓗ
63
12
FROM Q3006
PB. ON SW
20
15
Q5007
Q5006
1
5
4
1
5
4

Next Page:
AUDIO Section

3-9. AUDIO BLOCK DIAGRAM



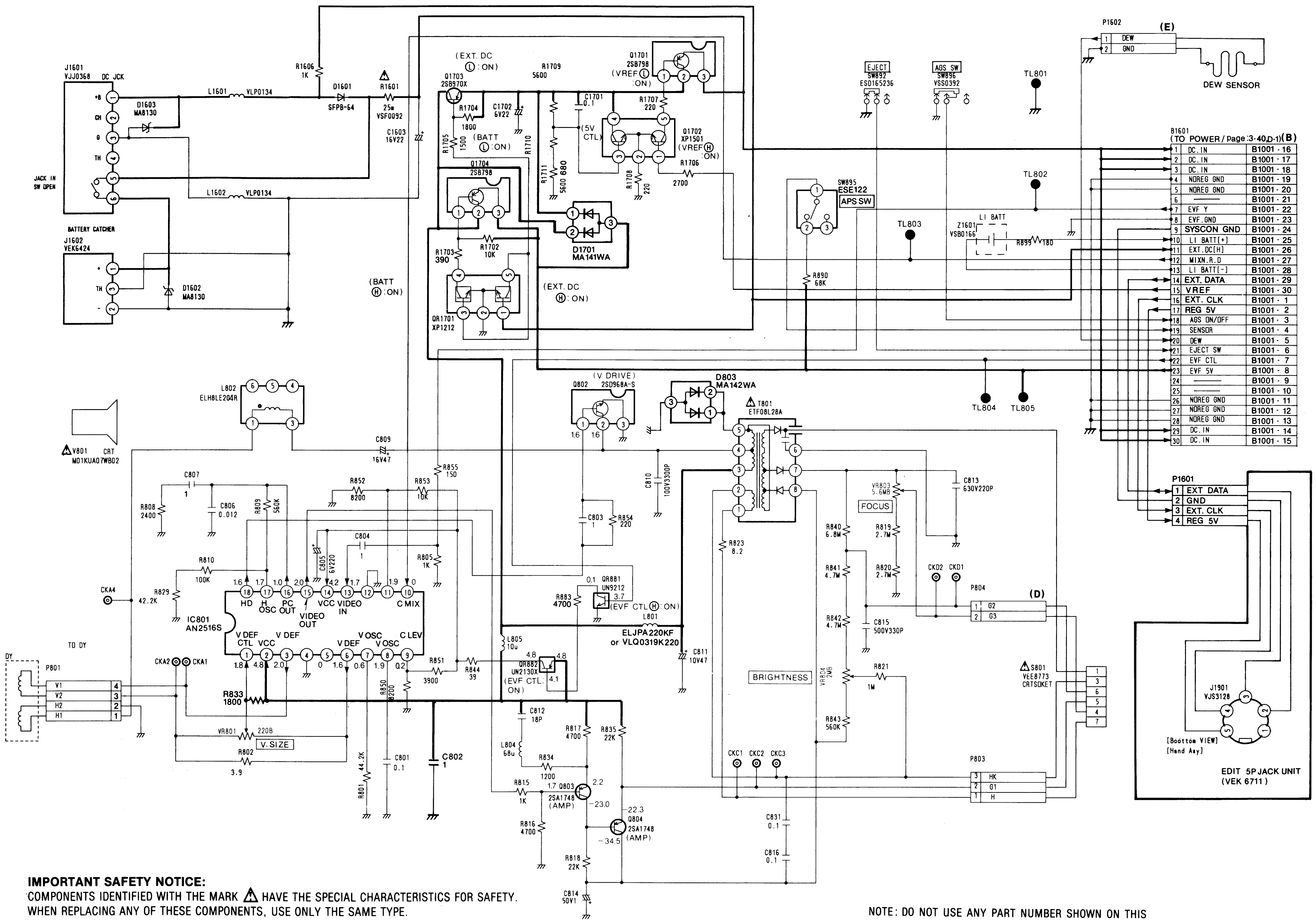
IC4501
AGC
AMP
FRDER MAX6dB
PEAK DET
NON LINEAR AMP
OP AMP
AUDIO LPF
CCA
MIX
1H TRAP
NOR PB NF
NOR. PB EQSW
N REC
N MUTE
N PB
SW
N. MUTE
ST
MONO
MUTE
SH NOISE
VCO
REC RF LPF
AUDIO LIMIT
PC
PB LPF
Rch BPF
Lch BPF
REC FM (R)
REC FM (L)
PB FM
NOR. PB
NOR. REC
A OUT (R)
A OUT (L)
FADE (L)
M OUT (L)
M OUT (R)
NORMAL AUDIO HEAD
AH (P)
AH (R)
FP4001
FP4002
FP4003
B1501
B4001
AUDIO OUT (R)
AUDIO OUT (L)
AV JACK C. B. A.
FROM PROCESS
FADE
Q4603
FADE AMP
Q4305, Q4306
Q4303, Q4304
P4301
P4001
IC4301
ECM (R)
ECM (C)
ECM (L)
MIC JACK (J4301)
MIC UNIT
R
P


IC4501
AGC
AMP
FRDER MAX6dB
PEAK DET
NON LINEAR AMP
OP AMP
AUDIO LPF
CCA
MIX
fH TRAP
NOR PB NF
NOR. PB EQSW
NOR. PB
NOR. REC
N. MUTE
N REC
N MUTE
N PB
SW
MUTE
ST
MONO
A OUT (R)
A OUT (L)
FADE (L)
SH NOISE
VCO
REC RF LPF
AUDIO LIMIT
PC
PB LPF
Rch BPF
Lch BPF
REC FM (R)
REC FM (L)
PB FM
TL4508
CL4503
TL4507
CL4505
TL4509
Q4601
FP4003
FP4002
IC5001
CURRENT AMP
RF AMP SW
H. AMP SW
FROM SYSTEM CTL & SERVO
A. HEAD AMP SW
A. HA SW
A. HEAD SW
A. H SW
REC FM
FP5001
R1 HEAD
R2 HEAD
L1 HEAD
L2 HEAD

⬅ MAIN SIGNAL PATH IN REC MODE

⇦ MAIN SIGNAL PATH IN PLAYBACK MODE

3-10. E.V.F. SCHEMATIC DIAGRAM

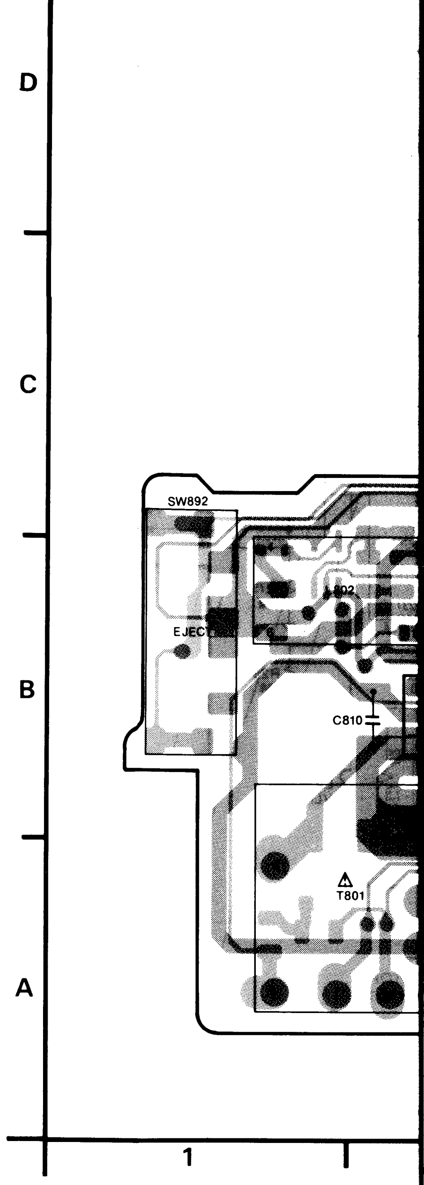

E
D
C
B
A
1
2
3
4
5
6
7
J1601
VJJ0368 DC JCK
+B
CH
B
TH
JACK IN SW OPEN
L1601 VLP0134
L1602 VLP0134
D1603 MA8130
BATTERY CATCHER
J1602
VEK6424
D1602 MA8130
R1606 1K
D1601 SFPB-64
R1601 25m VSF0092
C1603 16V22
(EXT. DC Ⓛ:ON)
Q1703 2SB970X
R1704 1800
C1702 6V22
R1705 1500
(BATT Ⓛ:ON)
R1710
R1709 5600
R1711 5600 680
C1701 0.1
(5V CTL)
Q1701 2SB798
(VREF Ⓛ:ON)
R1707 220
Q1702 XP1501
(VREF Ⓗ:ON)
R1708 220
R1706 2700
Q1704 2SB798
D1701 MA141WA
R1703 390
R1702 10K
QR1701 XP1212
(BATT Ⓗ:ON)
(EXT. DC Ⓗ:ON)
EJECT SW892 ESD165236
AGS SW SW896 VSS0392
SW895 ESE122 APS SW
R890 68K
TL801
TL802
TL803
TL804
TL805
Z1601 VSB0166
LI BATT
R899 180
P1602
(E)
DEW
GND
DEW SENSOR
B1601
(TO POWER / Page 3-40 D-1) (B)
1 DC.IN B1001 - 16
2 DC.IN B1001 - 17
3 DC.IN B1001 - 18
4 NOREG GND B1001 - 19
5 NOREG GND B1001 - 20
6 ——— B1001 - 21
7 EVF Y B1001 - 22
8 EVF GND B1001 - 23
9 SYSCON GND B1001 - 24
10 LI BATT(+) B1001 - 25
11 EXT.DC(H) B1001 - 26
12 MIXN.R.D B1001 - 27
13 LI BATT(-) B1001 - 28
14 EXT. DATA B1001 - 29
15 VREF B1001 - 30
16 EXT. CLK B1001 - 1
17 REG 5V B1001 - 2
18 AGS ON/OFF B1001 - 3
19 SENSOR B1001 - 4
20 DEW B1001 - 5
21 EJECT SW B1001 - 6
22 EVF CTL B1001 - 7
23 EVF 5V B1001 - 8
24 ——— B1001 - 9
25 ——— B1001 - 10
26 NOREG GND B1001 - 11
27 NOREG GND B1001 - 12
28 NOREG GND B1001 - 13
29 DC.IN B1001 - 14
30 DC.IN B1001 - 15
P1601
1 EXT DATA
2 GND
3 EXT. CLK
4 REG 5V
J1901 VJS3128
[Boottom VIEW] [Hand Assy]
EDIT 5P JACK UNIT (VEK 6711)
L802 ELH8LE204R
V801 CRT M01KUA07WB02
C809 16V47
(V DRIVE)
Q802 2SD968A-S
D803 MA142WA
T801 ETF08L28A
C810 100V3300P
C813 630V220P
VR803 5.6MB
FOCUS
R840 6.8M
R841 4.7M
R842 4.7M
R819 2.7M
R820 2.7M
C815 500V330P
CKO2 CKO1
P804
(D)
G2
G3
R821 1M
VR804 2MB
BRIGHTNESS
R843 560K
S801 VEE8773 CRTSOKET
CKC1 CKC2 CKC3
P803
HK
G1
H
C831 0.1
C816 0.1
R823 8.2
C807 1
R808 2400
C806 0.012
R809 560K
R852 8200
R853 10K
R855 150
C803 1
R854 220
C804 1
C805 6V220
R805 1K
R810 100K
R829 42.2K
CKA4
IC801 AN2516S
HD
H OSC
PC OUT
VIDEO OUT
VCC
VIDEO IN
C MIX
V DEF CTL
VCC
V DEF
V DEF
V OSC
V OSC
C LEV
QR881 UN9212
(EVF CTL Ⓗ:ON)
R883 4700
L801 ELJPA220KF or VLQ0319K220
C811 10V47
L805 10u
QR882 UN2130X (EVF CTL: ON)
R851 3900
R844 39
R850 8200
TO DY
DY
P801
V1
V2
H2
H1
CKA2 CKA1
R833 1800
VR801 220B
V.SIZE
R802 3.9
R801 44.2K
C801 0.1
C802 1
C812 18P
L804 68u
R834 1200
R817 4700
R835 22K
R815 1K
Q803 2SA1748 (AMP)
R816 4700
Q804 2SA1748 (AMP)
R818 22K
C814 50V1

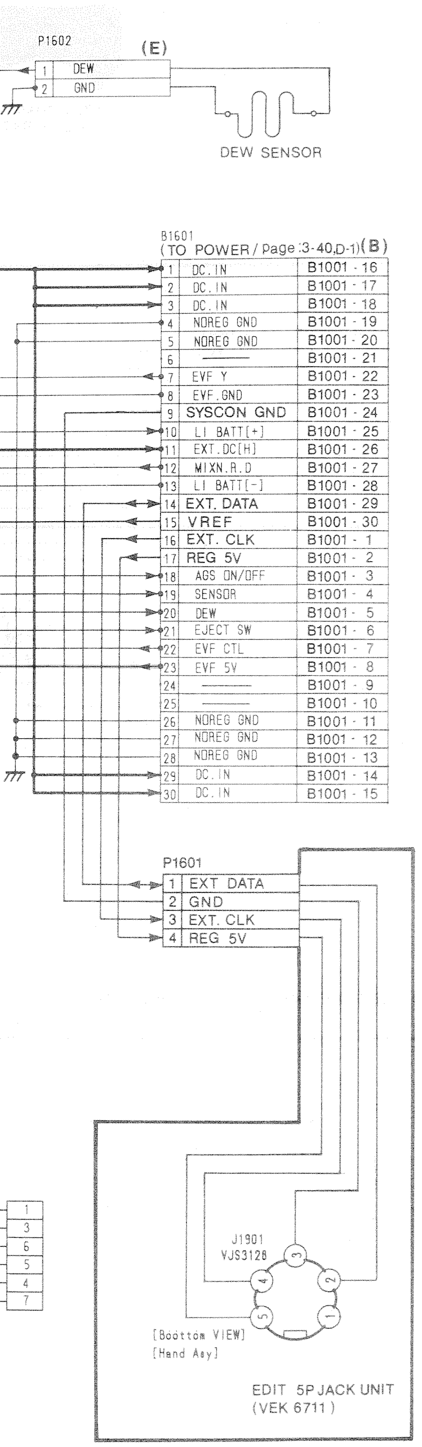
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

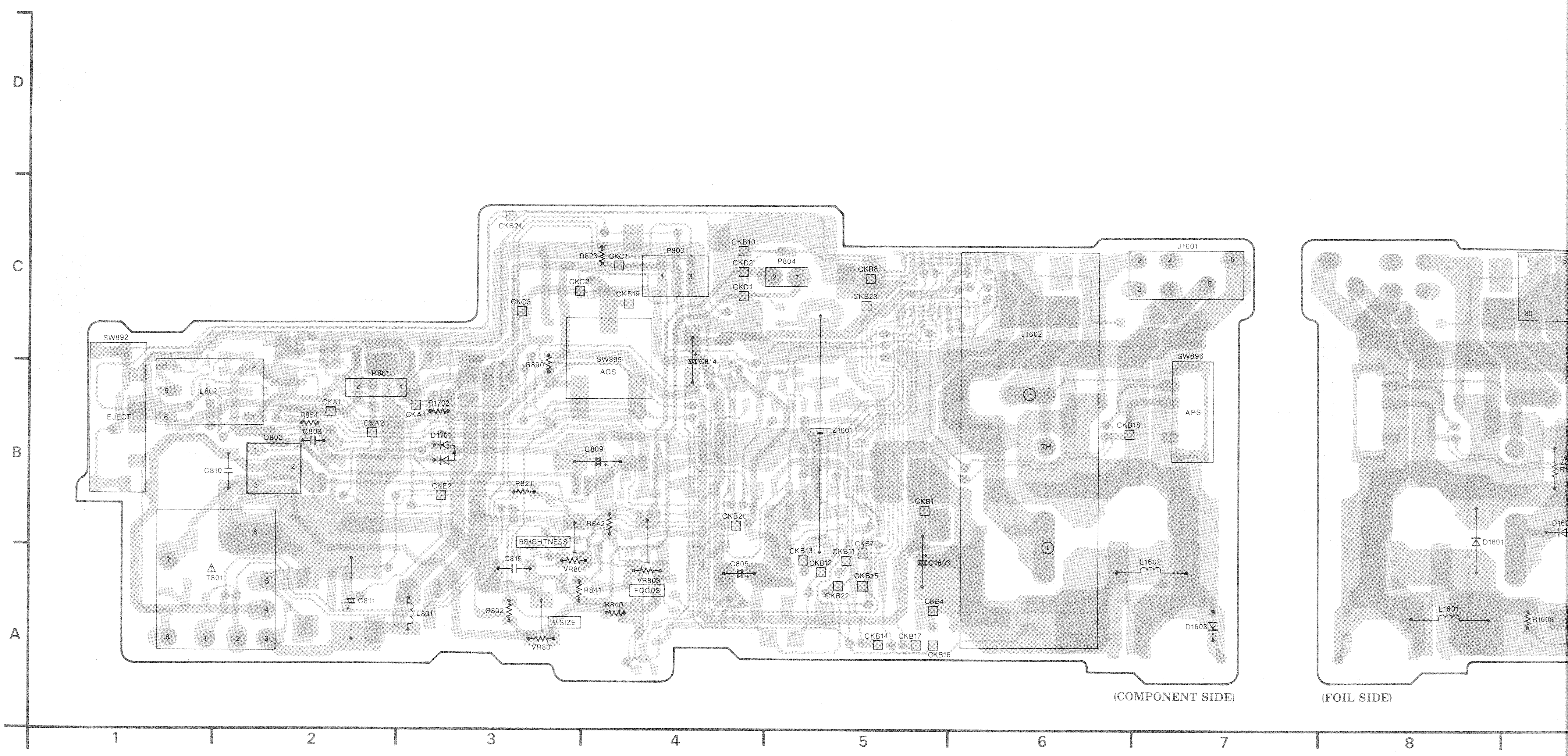
3-11. E.V.F. C.B.A. (VE


D
C
B
A
1
SW892
EJECT
C810
T801


P1602
(E)
1 DEW
2 GND
DEW SENSOR
B1601
(TO POWER / Page:3-40,D-1)(B)
1 DC.IN B1001 - 16
2 DC.IN B1001 - 17
3 DC.IN B1001 - 18
4 NOREG GND B1001 - 19
5 NOREG GND B1001 - 20
6 B1001 - 21
7 EVF Y B1001 - 22
8 EVF GND B1001 - 23
9 SYSCON GND B1001 - 24
10 LI BATT(+) B1001 - 25
11 EXT.DC(H) B1001 - 26
12 MIXN.R.D B1001 - 27
13 LI BATT(-) B1001 - 28
14 EXT. DATA B1001 - 29
15 VREF B1001 - 30
16 EXT. CLK B1001 - 1
17 REG 5V B1001 - 2
18 AGS ON/OFF B1001 - 3
19 SENSOR B1001 - 4
20 DEW B1001 - 5
21 EJECT SW B1001 - 6
22 EVF CTL B1001 - 7
23 EVF 5V B1001 - 8
24 B1001 - 9
25 B1001 - 10
26 NOREG GND B1001 - 11
27 NOREG GND B1001 - 12
28 NOREG GND B1001 - 13
29 DC.IN B1001 - 14
30 DC.IN B1001 - 15
P1601
1 EXT DATA
2 GND
3 EXT. CLK
4 REG 5V
1
3
6
5
4
7
J1901
VJS3128
[Bootom VIEW]
[Hand Asy]
EDIT 5P JACK UNIT
(VEK 6711)

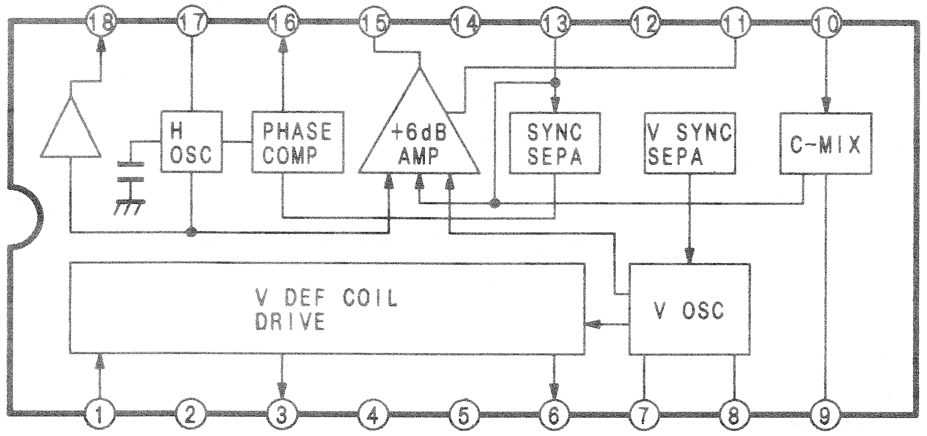
OWN ON THIS
WHEN YOU
RTS LIST.

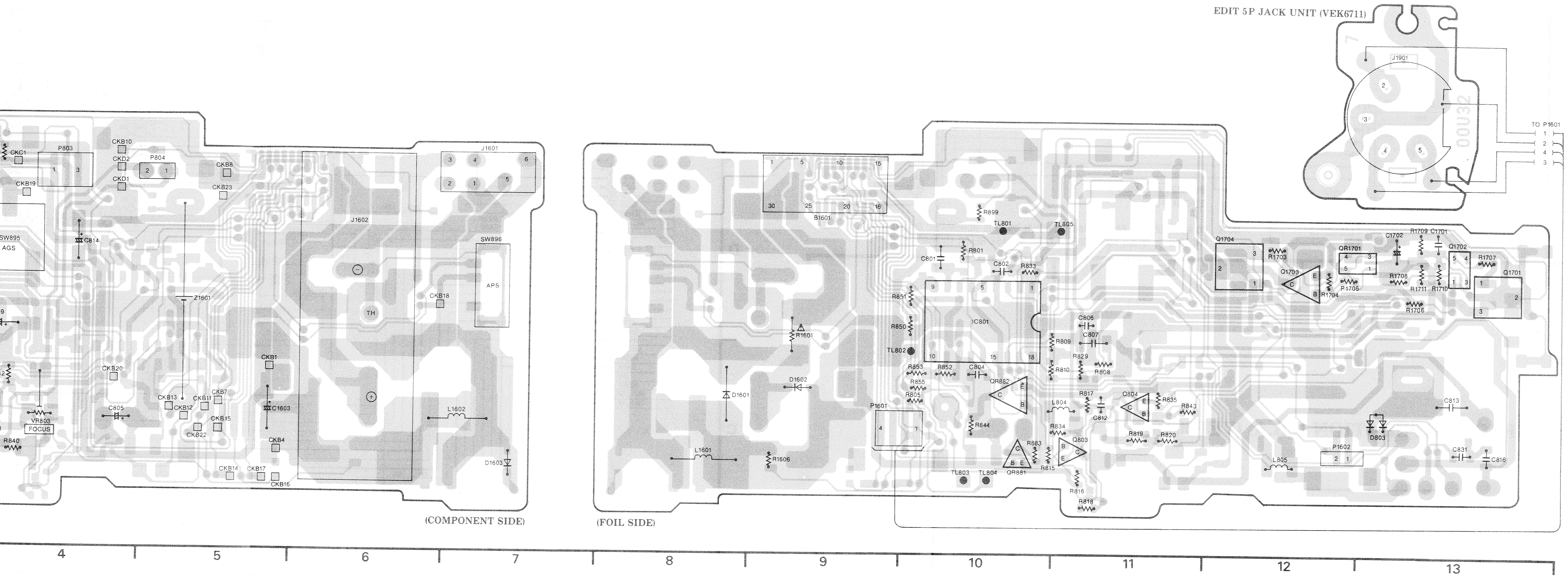
3-11. E.V.F. C.B.A. (VEP28087A)


D
C
B
A
1
2
3
4
5
6
7
8
CKB21
R823
CKC1
P803
CKB10
CKD2
P804
CKB8
CKD1
CKB23
CKC2
CKB19
CKC3
J1601
SW892
EJECT
L802
P801
R1702
CKA1
CKA4
R854
CKA2
C803
Q802
D1701
C810
R890
SW895
AGS
C814
Z1601
J1602
SW896
APS
CKB18
TH
C809
CKE2
R821
R842
CKB20
CKB1
CKB13
CKB11
CKB7
CKB12
C1603
BRIGHTNESS
C815
VR804
C805
VR803
FOCUS
CKB15
CKB22
R841
R840
CKB4
T801
C811
L801
R802
V SIZE
VR801
CKB14
CKB17
CKB16
L1602
D1603
D1601
L1601
R1606
(COMPONENT SIDE)
(FOIL SIDE)

IC BLOCK

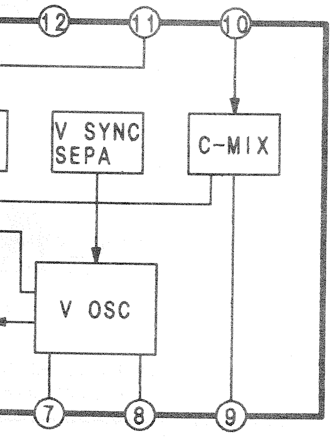
IC801 (AN2516S)


18
17
16
15
14
13
12
11
10
H OSC
PHASE COMP
+6dB AMP
SYNC SEPA
V SYNC SEPA
C-MIX
V DEF COIL DRIVE
V OSC
1
2
3
4
5
6
7
8
9


EDIT 5P JACK UNIT (VEK6711)
J1901
TO P1601
J1601
J1602
SW896
APS
SW895
AGS
P803
P804
Z1601
VR803
FOCUS
C805
C814
C1603
L1602
D1603
TH
B1601
IC801
P1601
L1601
D1601
D1602
R1601
R1606
TL801
TL802
TL803
TL804
TL805
QR881
QR882
QR1701
Q803
Q804
Q1701
Q1702
Q1703
Q1704
D803
P1602
L804
L805
C813
C816
C831
4
5
6
7
8
9
10
11
12
13

(COMPONENT SIDE)

(FOIL SIDE)


12
11
10
V SYNC SEPA
C-MIX
V OSC
7
8
9

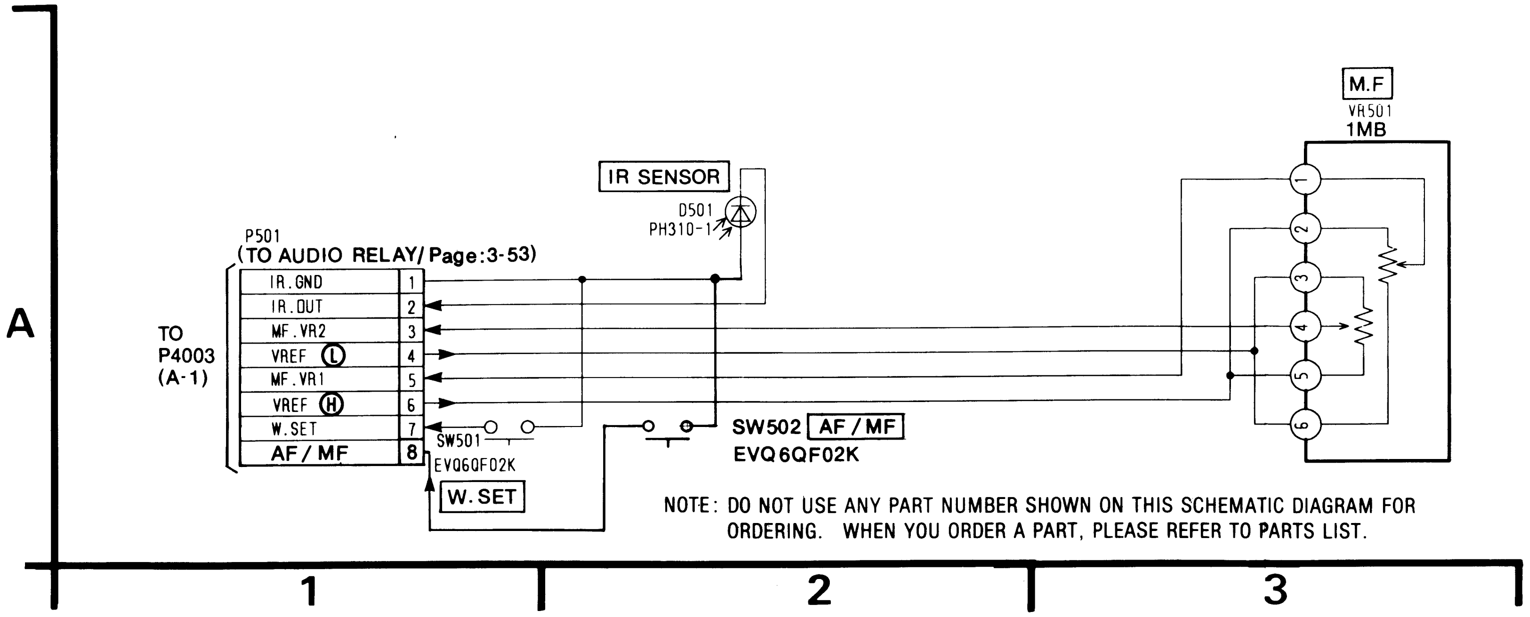
EVF C.B.A.

Integrated Circuit	
IC801	B-10
Transistor	
Q802	B-2
Q803	A-11
Q804	A-11
Q805	A-1
Q1701	B-13
Q1702	C-13
Q1703	B-12
Q1704	C-12
Transistor & Resistor	
QR881	A-10
QR882	A-10
QR1701	C-13

Test Point	
TL801	C-10
TL802	B-10
TL803	A-10
TL804	A-10
TL805	C-11
Adjustment	
VR801	A-3
VR803	B-4
VR804	B-3
Connector	
B1601	C-9
P801	C-2
P803	C-4
P804	C-5
P1601	A-9
P1602	A-12

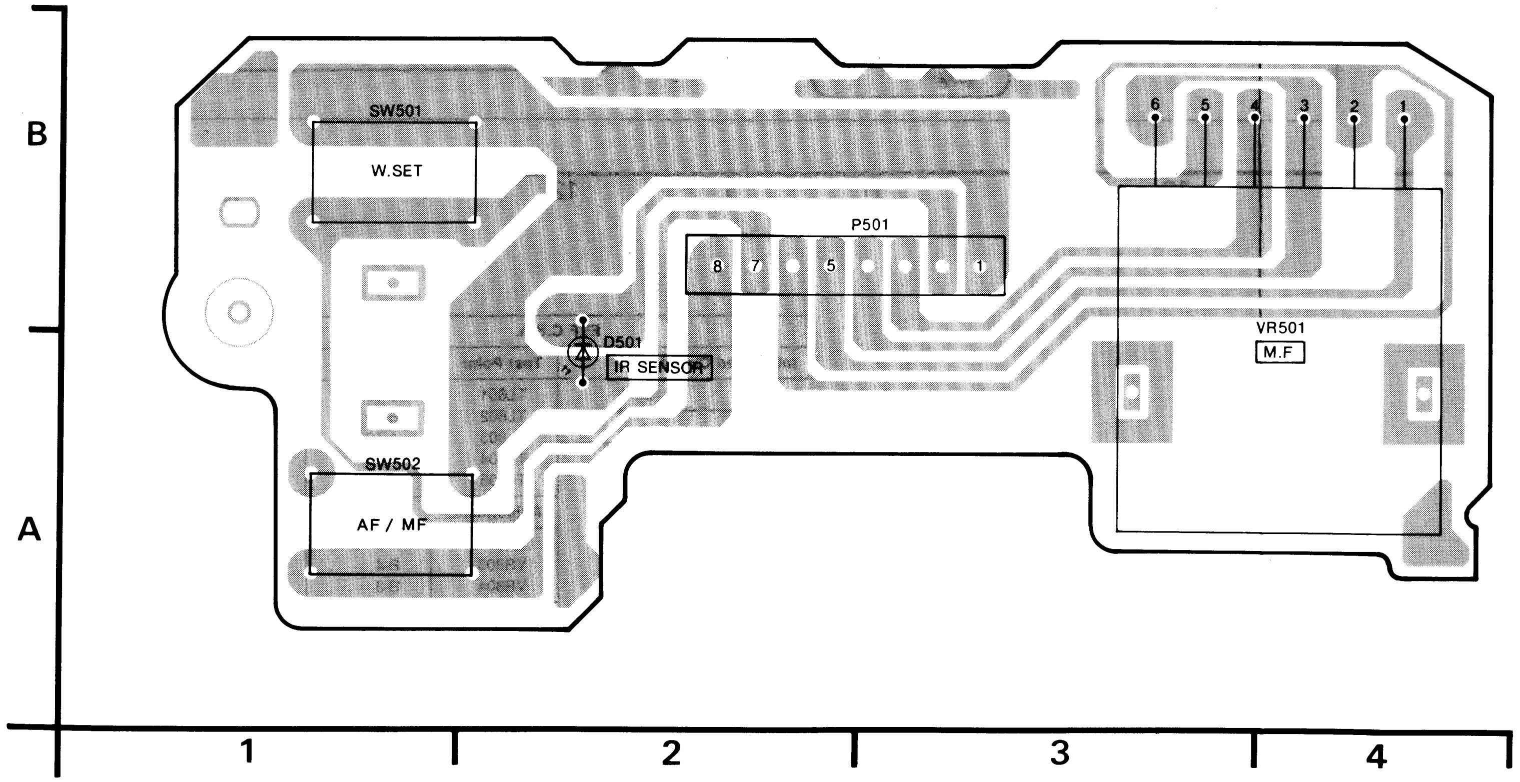
ADDRESS INFORMATION

3-12. FRONT OPERATION SCHEMATIC DIAGRAM


P501
(TO AUDIO RELAY/ Page:3-53)
TO
P4003
(A-1)
IR.GND 1
IR.OUT 2
MF.VR2 3
VREF Ⓛ 4
MF.VR1 5
VREF Ⓗ 6
W.SET 7
AF/MF 8
IR SENSOR
D501
PH310-1
M.F
VR501
1MB
SW501
EVQ6QF02K
W.SET
SW502 AF/MF
EVQ6QF02K
A
1
2
3

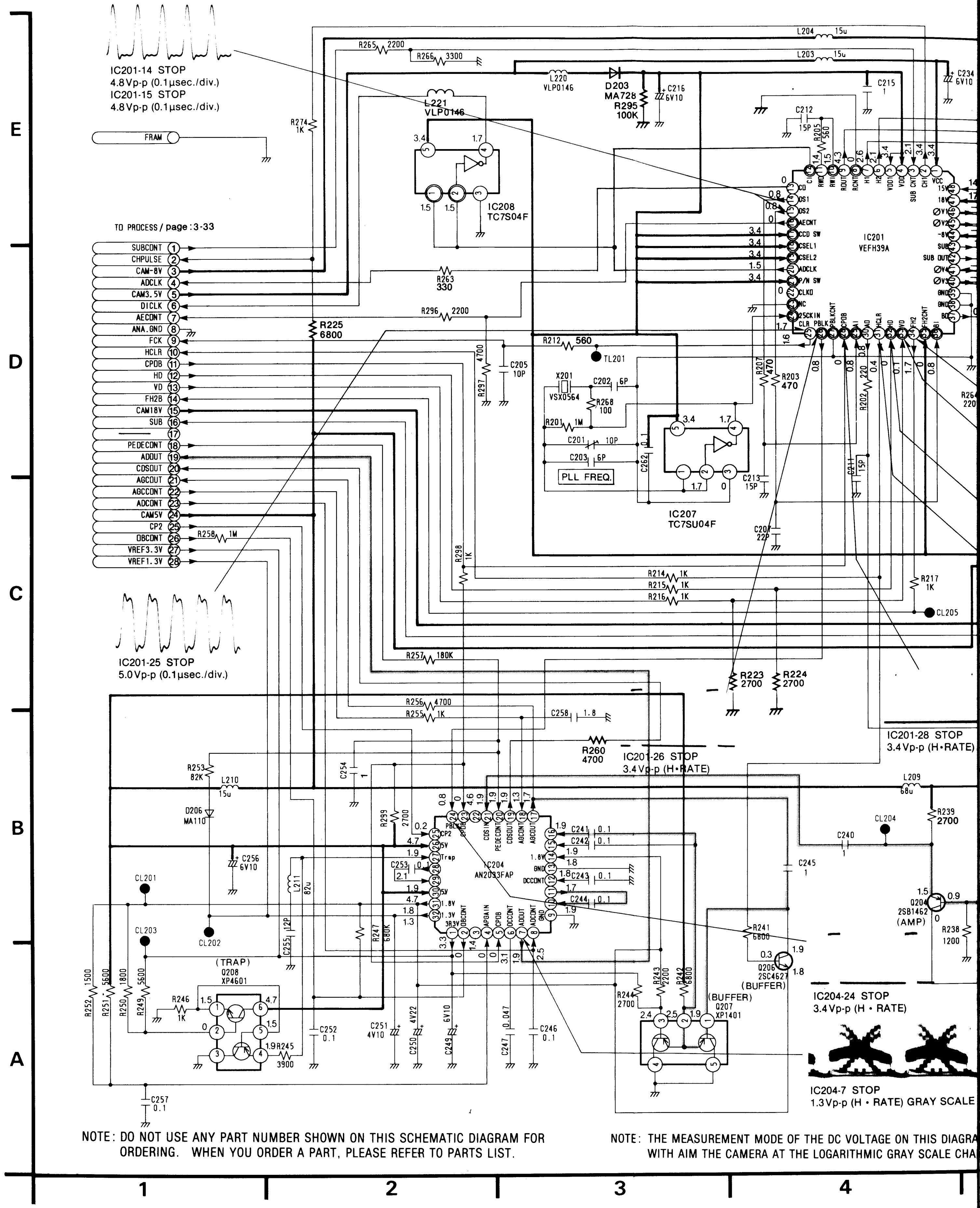
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-13. FRONT OPERATION C.B.A. (VEP00T97B)


SW501
W.SET
SW502
AF / MF
P501
8 7 5 1
D501
IR SENSOR
VR501
M.F
6 5 4 3 2 1
B
A
1
2
3
4

Back Page:
E.V.F. Section

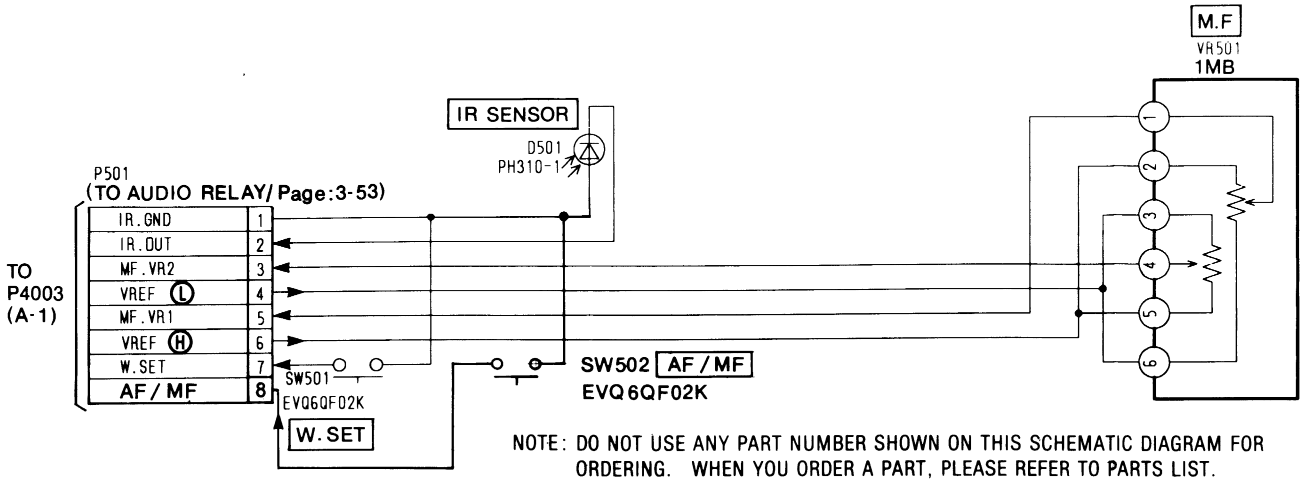
3-14. SENSOR SCHEMATIC DIAGRAM


IC201-14 STOP
4.8Vp-p (0.1µsec./div.)
IC201-15 STOP
4.8Vp-p (0.1µsec./div.)
FRAM
TO PROCESS / page:3-33
SUBCONT 1
CHPULSE 2
CAM-8V 3
ADCLK 4
CAM3.5V 5
DICLK 6
AECONT 7
ANA.GND 8
FCK 9
HCLR 10
CPDB 11
HD 12
VD 13
FH2B 14
CAM18V 15
SUB 16
17
PEDECONT 18
ADOUT 19
COSOUT 20
AGCOUT 21
AGCCONT 22
ADCONT 23
CAM5V 24
CP2 25
OBCONT 26
VREF3.3V 27
VREF1.3V 28
IC201-25 STOP
5.0Vp-p (0.1µsec./div.)
IC201
VEFH39A
IC208
TC7S04F
IC207
TC7SU04F
PLL FREQ.
X201
VSX0564
L221
VLP0146
L220
VLP0146
D203
MA728
R295
100K
IC204
AN2033FAP
(TRAP)
Q208
XP4601
(BUFFER)
Q206
2SC4627
(BUFFER)
Q207
XP1401
Q204
2SB1462
(AMP)
D206
MA110
CL201
CL202
CL203
CL204
CL205
TL201
IC201-28 STOP
3.4Vp-p (H•RATE)
IC201-26 STOP
3.4Vp-p (H•RATE)
IC204-24 STOP
3.4Vp-p (H • RATE)
IC204-7 STOP
1.3Vp-p (H • RATE) GRAY SCALE
E
D
C
B
A
1
2
3
4

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

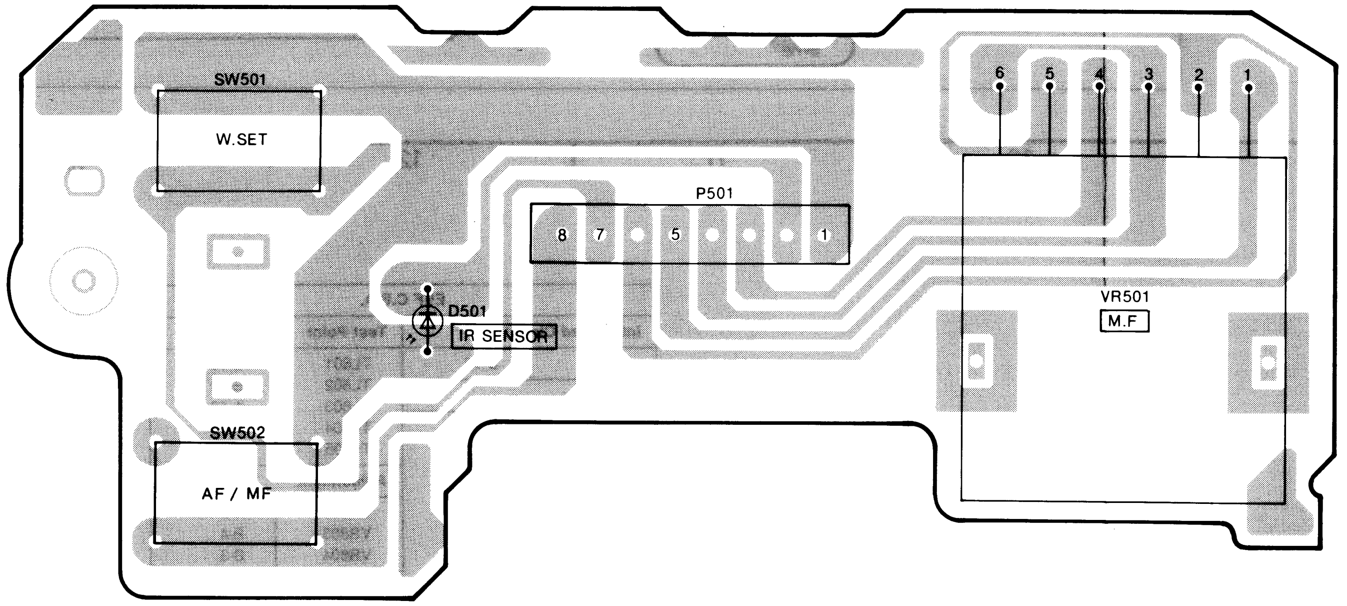
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRA
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHA

3-12. FRONT OPERATION SCHEMATIC DIAGRAM


M.F
VR501
1MB
IR SENSOR
D501
PH310-1
P501
(TO AUDIO RELAY/ Page:3-53)
TO
P4003
(A-1)
IR.GND 1
IR.OUT 2
MF.VR2 3
VREF Ⓛ 4
MF.VR1 5
VREF Ⓗ 6
W.SET 7
AF/MF 8
SW501
EVQ6QF02K
W.SET
SW502 AF/MF
EVQ6QF02K

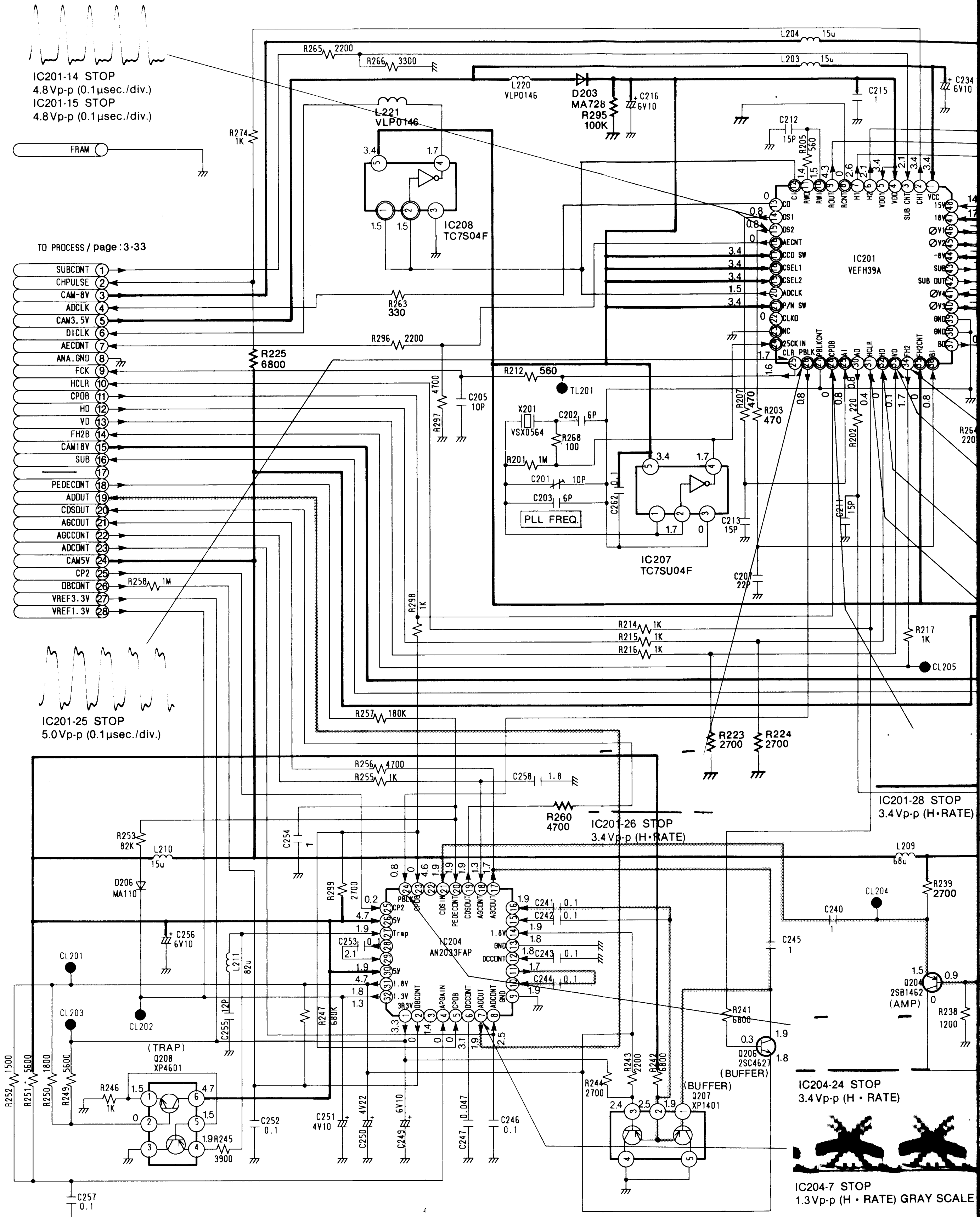
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-13. FRONT OPERATION C.B.A. (VEP00T97B)


SW501
W.SET
SW502
AF / MF
P501
D501
IR SENSOR
VR501
M.F
6
5
4
3
2
1
8
7
5
1

Back Page:
E.V.F. Section

3-14. SENSOR SCHEMATIC DIAGRAM


IC201
VEFH39A
IC204
AN2033FAP
IC208
TC7S04F
IC207
TC7SU04F
TO PROCESS / page:3-33
SUBCONT
CHPULSE
CAM-8V
ADCLK
CAM3.5V
DICLK
AECONT
ANA.GND
FCK
HCLR
CPOB
HD
VD
FH28
CAM18V
SUB
PEDECONT
ADOUT
COSOUT
AGCOUT
AGCCONT
ADCONT
CAM5V
CP2
DBCONT
VREF3.3V
VREF1.3V
FRAM
PLL FREQ.
X201
VSX0564
L220
VLP0146
L221
VLP0146
D203
MA728
D206
MA110
Q208
XP4601
(TRAP)
Q207
XP1401
(BUFFER)
Q206
2SC4627
(BUFFER)
Q204
2SB1462
(AMP)
CL201
CL202
CL203
CL204
CL205
TL201

IC201-14 STOP
4.8Vp-p (0.1μsec./div.)
IC201-15 STOP
4.8Vp-p (0.1μsec./div.)

IC201-25 STOP
5.0Vp-p (0.1μsec./div.)

IC201-28 STOP
3.4Vp-p (H•RATE)

IC201-26 STOP
3.4Vp-p (H•RATE)

IC204-24 STOP
3.4Vp-p (H • RATE)

IC204-7 STOP
1.3Vp-p (H • RATE) GRAY SCALE

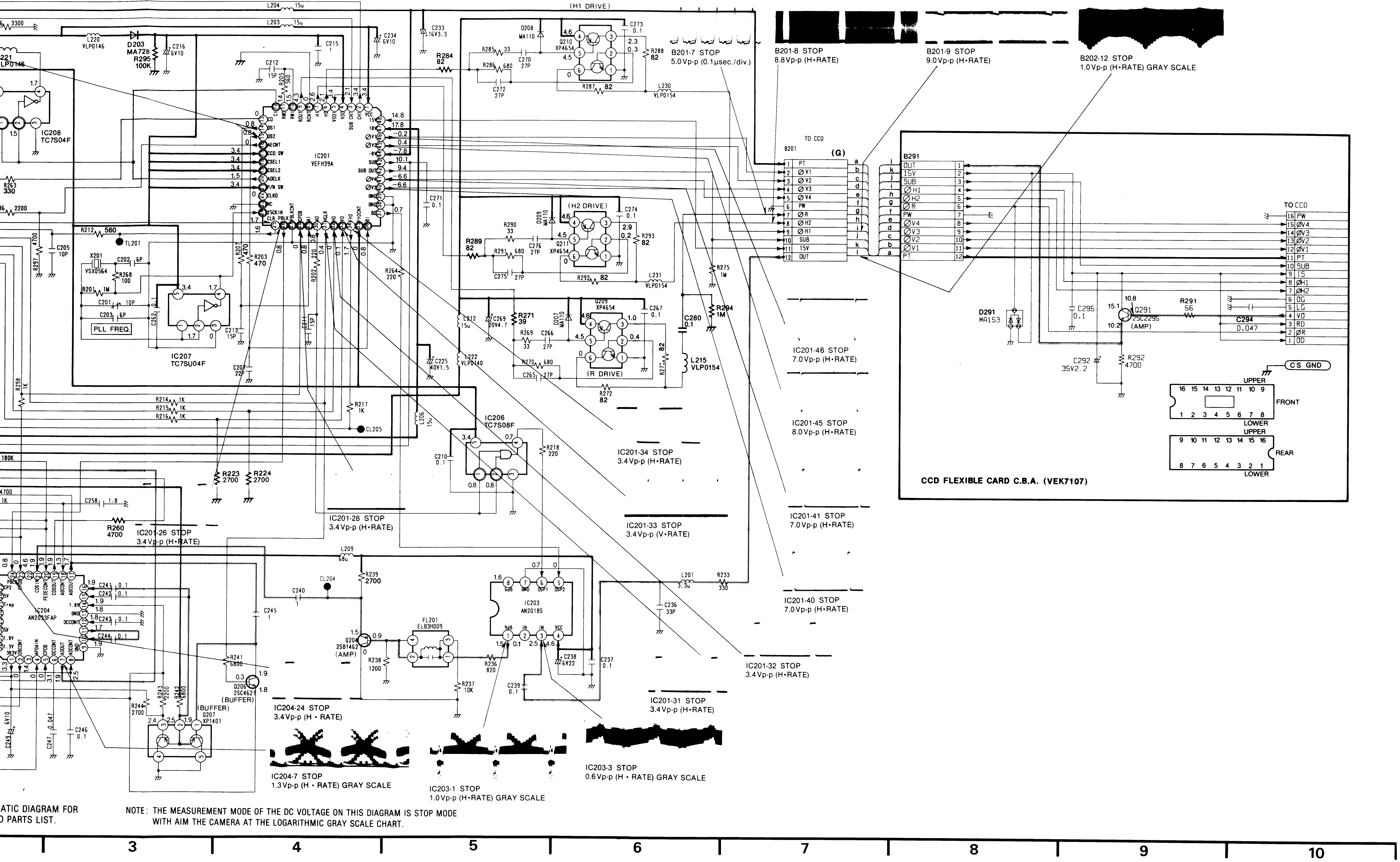
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRA
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHA

& SENSOR Section

RAM

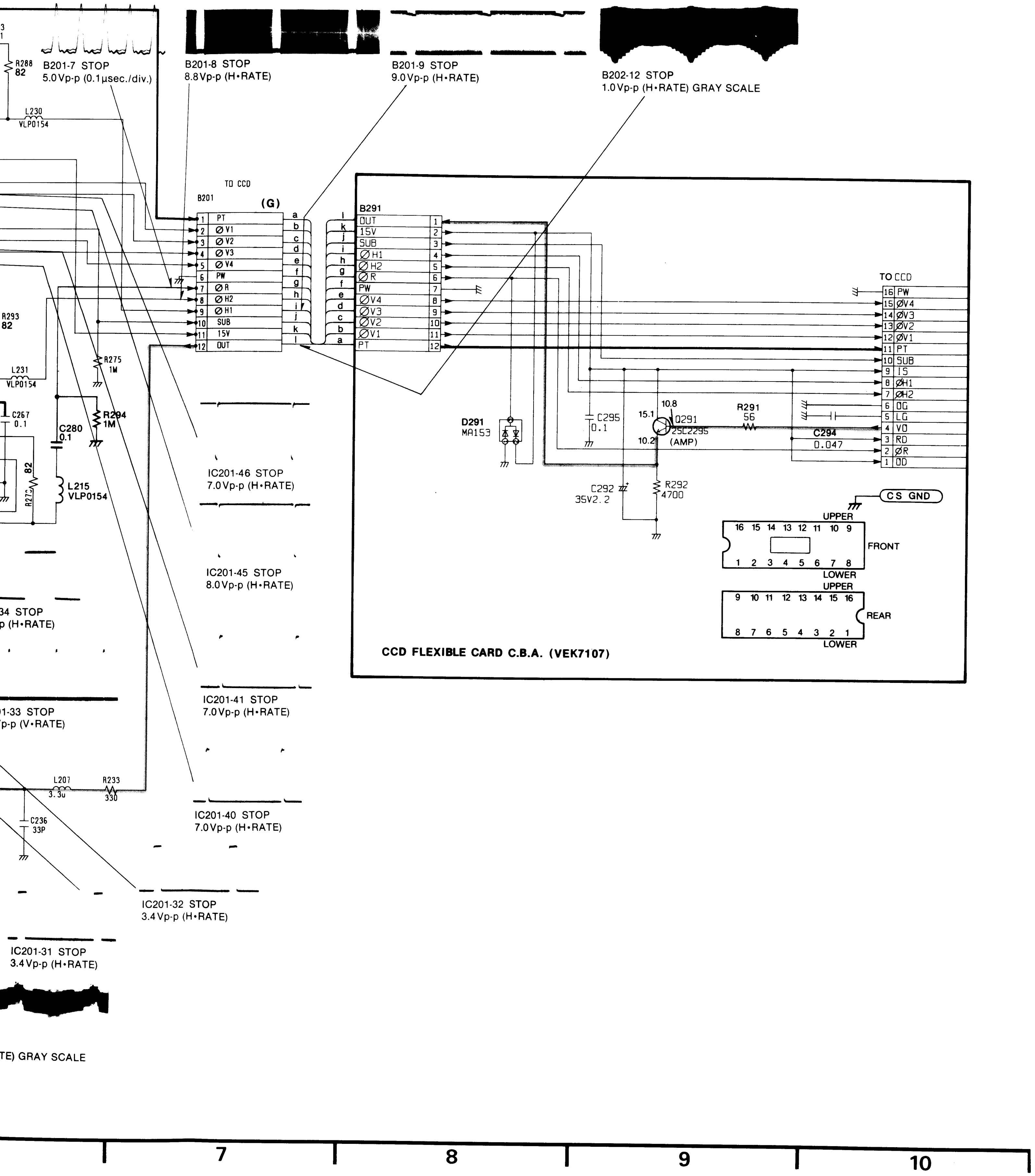
VIDEO SIGNAL PATH



IC201 VEFH39A
IC207 TC7SU04F
IC208 TC7S04F
IC206 TC7S08F
IC203 AN2018S
IC204 AN2033FAP
FL201 ELB3H009
Q204 2SB1462 (AMP)
Q206 2SC4627 (BUFFER)
Q207 XP1401 (BUFFER)
Q210 XP4654
Q211 XP4654
Q209 XP4654
(H1 DRIVE)
(H2 DRIVE)
(R DRIVE)
PLL FREQ.
TO CCD
B201
(G)
B291
TO CCD
D291 MA153
Q291 2SC2295 (AMP)
CS GND
UPPER
FRONT
LOWER
UPPER
REAR
LOWER
CCD FLEXIBLE CARD C.B.A. (VEK7107)
B201-7 STOP
5.0Vp-p (0.1μsec./div.)
B201-8 STOP
8.8Vp-p (H•RATE)
B201-9 STOP
9.0Vp-p (H•RATE)
B202-12 STOP
1.0Vp-p (H•RATE) GRAY SCALE
IC201-46 STOP
7.0Vp-p (H•RATE)
IC201-45 STOP
8.0Vp-p (H•RATE)
IC201-34 STOP
3.4Vp-p (H•RATE)
IC201-33 STOP
3.4Vp-p (V•RATE)
IC201-41 STOP
7.0Vp-p (H•RATE)
IC201-40 STOP
7.0Vp-p (H•RATE)
IC201-28 STOP
3.4Vp-p (H•RATE)
IC201-26 STOP
3.4Vp-p (H•RATE)
IC201-32 STOP
3.4Vp-p (H•RATE)
IC201-31 STOP
3.4Vp-p (H•RATE)
IC204-24 STOP
3.4Vp-p (H • RATE)
IC204-7 STOP
1.3Vp-p (H • RATE) GRAY SCALE
IC203-1 STOP
1.0Vp-p (H•RATE) GRAY SCALE
IC203-3 STOP
0.6Vp-p (H • RATE) GRAY SCALE
3
4
5
6
7
8
9
10

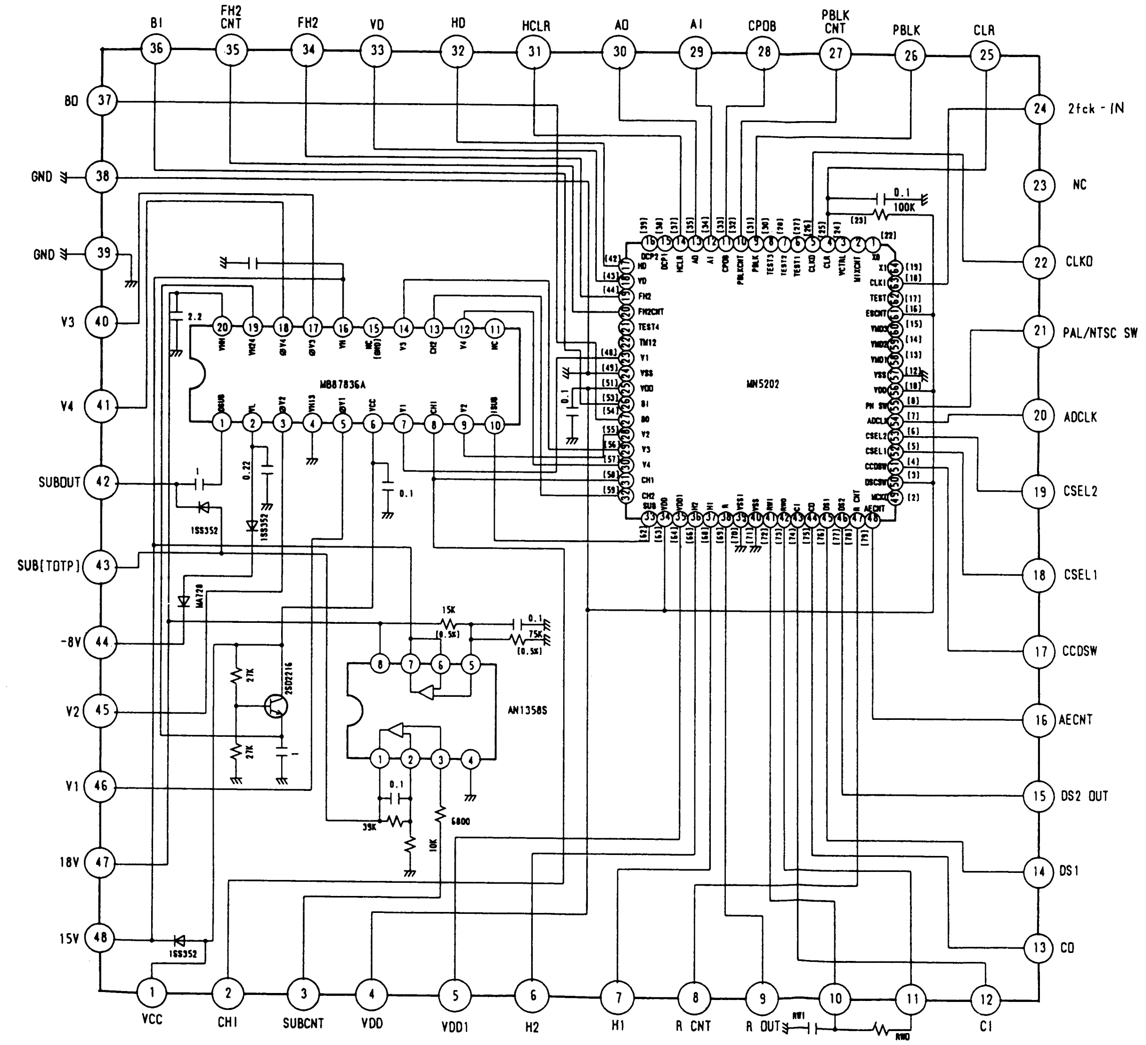
ATIC DIAGRAM FOR
D PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

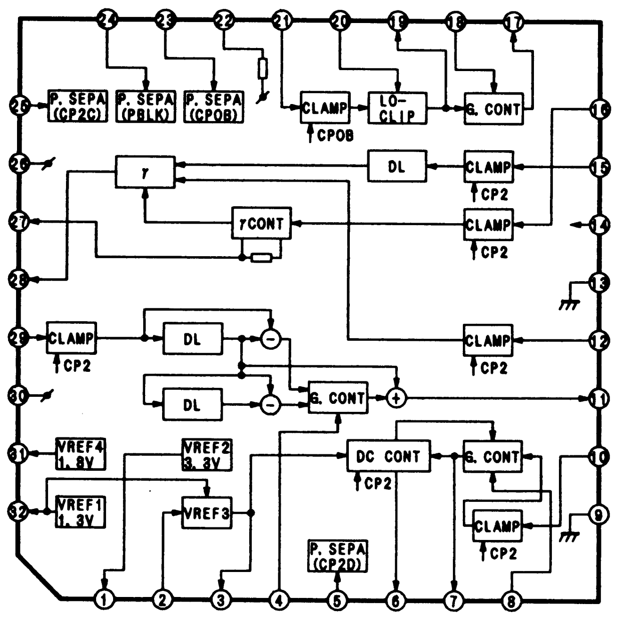

B201-7 STOP
5.0Vp-p (0.1μsec./div.)
B201-8 STOP
8.8Vp-p (H•RATE)
B201-9 STOP
9.0Vp-p (H•RATE)
B202-12 STOP
1.0Vp-p (H•RATE) GRAY SCALE
R288
82
L230
VLP0154
TO CCD
B201
(G)
PT
ØV1
ØV2
ØV3
ØV4
PW
ØR
ØH2
ØH1
SUB
15V
OUT
B291
OUT
15V
SUB
ØH1
ØH2
ØR
PW
ØV4
ØV3
ØV2
ØV1
PT
TO CCD
PW
ØV4
ØV3
ØV2
ØV1
PT
SUB
IS
ØH1
ØH2
OG
LG
VO
RD
ØR
OD
R293
82
L231
VLP0154
R275
1M
C267
0.1
C280
0.1
R294
1M
L215
VLP0154
D291
MA153
C295
0.1
Q291
2SC2295
(AMP)
15.1
10.8
10.2
R291
56
C294
0.047
C292
35V2.2
R292
4700
CS GND
UPPER
FRONT
LOWER
UPPER
REAR
LOWER
CCD FLEXIBLE CARD C.B.A. (VEK7107)
IC201-46 STOP
7.0Vp-p (H•RATE)
IC201-45 STOP
8.0Vp-p (H•RATE)
34 STOP
p (H•RATE)
IC201-41 STOP
7.0Vp-p (H•RATE)
1-33 STOP
p-p (V•RATE)
L207
3.3u
R233
330
C236
33P
IC201-40 STOP
7.0Vp-p (H•RATE)
IC201-32 STOP
3.4Vp-p (H•RATE)
IC201-31 STOP
3.4Vp-p (H•RATE)
TE) GRAY SCALE
7
8
9
10

IC BLOCK

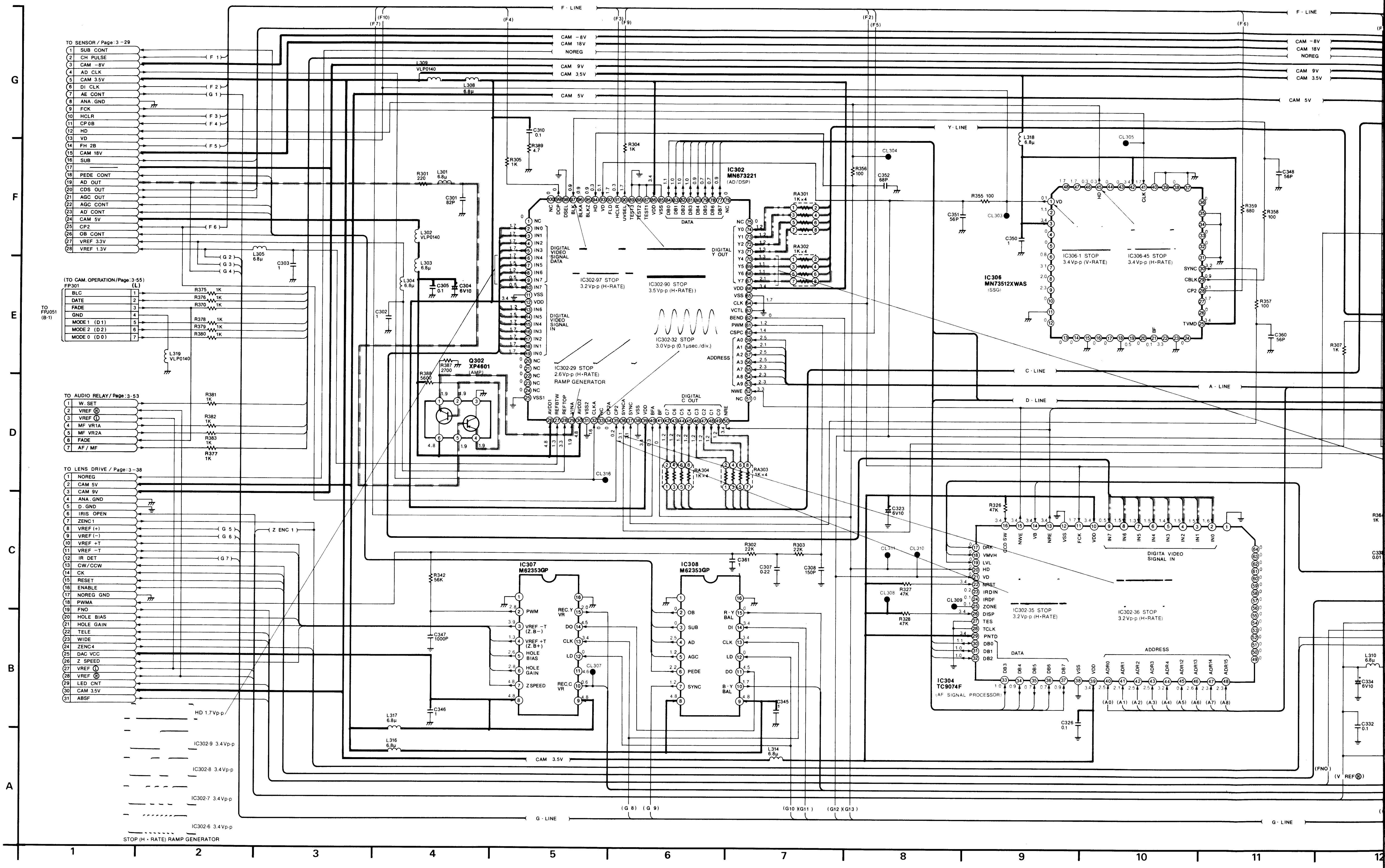
IC201 (VEFH39A)

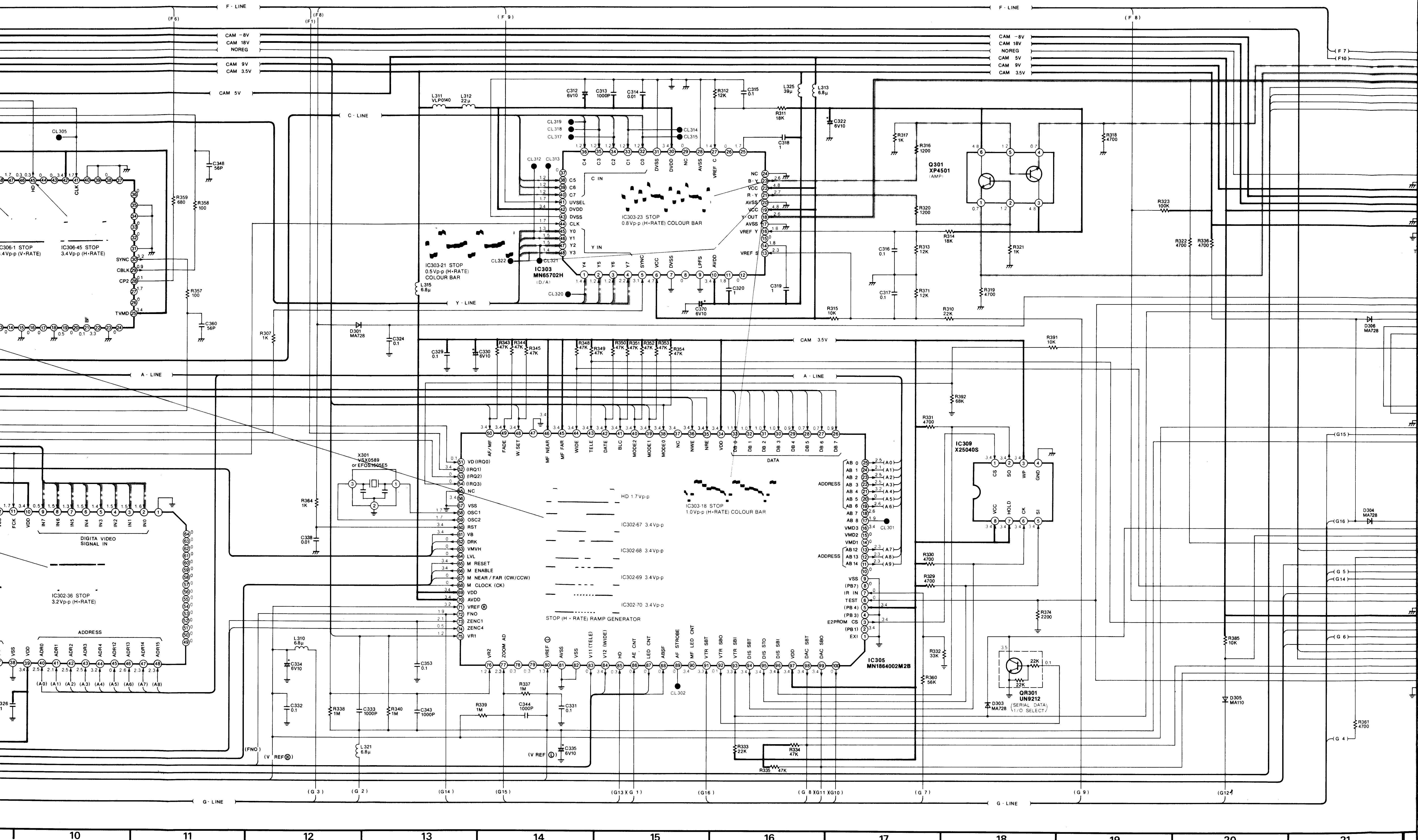

BI
FH2 CNT
FH2
VD
HD
HCLR
AD
AI
CPOB
PBLK CNT
PBLK
CLR
BO
GND
GND
V3
V4
SUBOUT
SUB(TDTP)
-8V
V2
V1
18V
15V
2fck - IN
NC
CLKO
PAL/NTSC SW
ADCLK
CSEL2
CSEL1
CCDSW
AECNT
DS2 OUT
DS1
CO
VCC
CHI
SUBCNT
VDD
VDD1
H2
H1
R CNT
R OUT
CI
MB87836A
MN5202
AN1358S
2SD1216
1SS352
MA178
100K

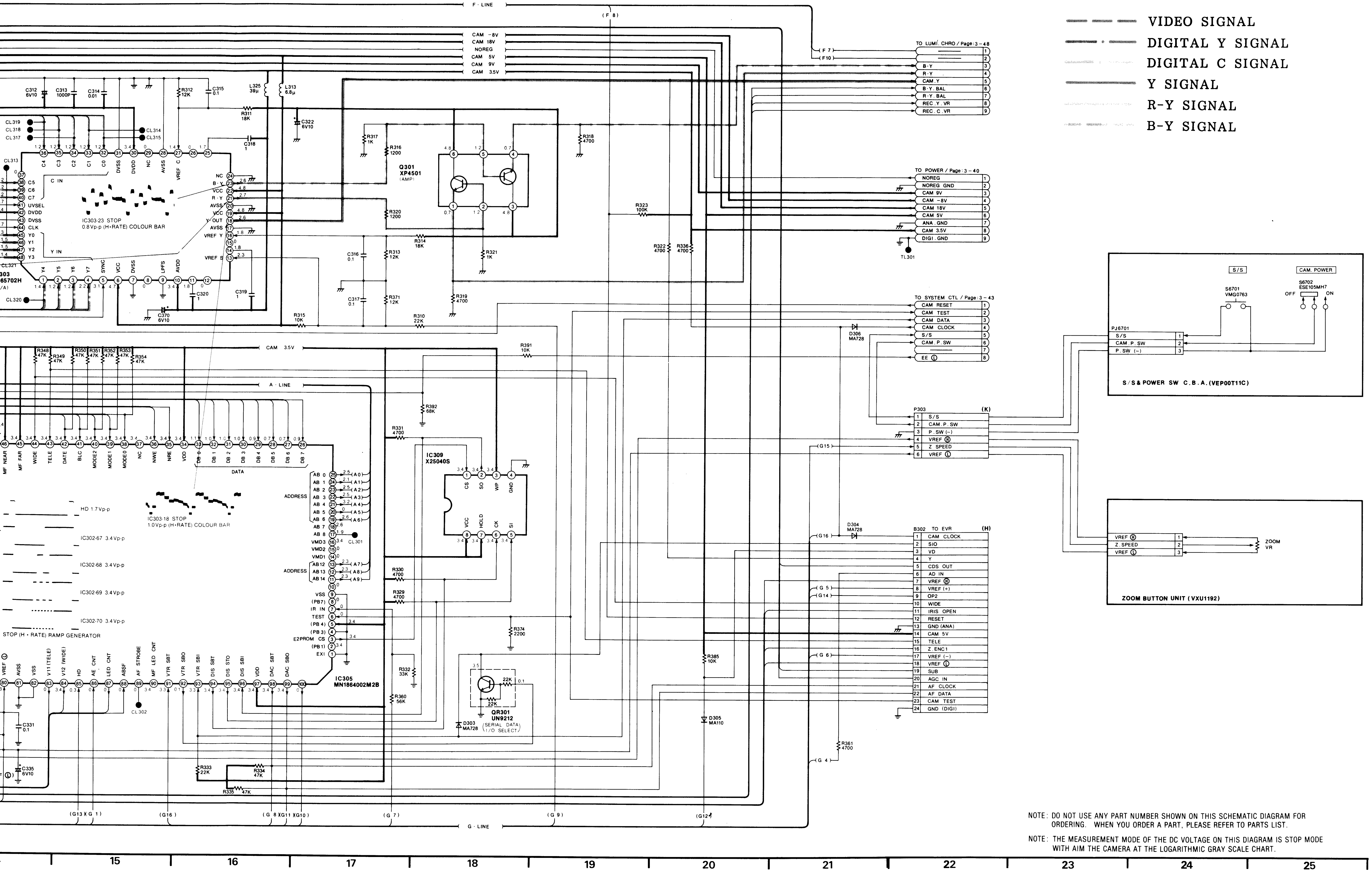
IC204 (AN2033FAP)


P. SEPA (CP2C)
P. SEPA (PBLK)
P. SEPA (CPOB)
CLAMP
CPOB
LO-CLIP
G. CONT
γ
DL
CLAMP
CP2
γCONT
CLAMP
CP2
CLAMP
CP2
DL
G. CONT
CLAMP
CP2
DL
VREF4 1.8V
VREF2 3.3V
DC CONT
CP2
G. CONT
VREF1 1.3V
VREF3
CLAMP
CP2
P. SEPA (CP2D)

3-15. PROCESS SCHEMATIC DIAGRAM


TO SENSOR / Page: 3-29
SUB CONT
CH PULSE
CAM -8V
AD CLK
CAM 3.5V
DI CLK
AE CONT
ANA. GND
FCK
HCLR
CP 0B
HD
VD
FH 2B
CAM 18V
SUB
PEDE CONT
AD OUT
CDS OUT
AGC OUT
AGC CONT
AD CONT
CAM 5V
CP2
OB CONT
VREF 3.3V
VREF 1.3V
(TO CAM. OPERATION/Page: 3-55)
FP301
TO FPJ051 (B-1)
BLC
DATE
FADE
GND
MODE 1 (D1)
MODE 2 (D2)
MODE 0 (D0)
TO AUDIO RELAY / Page: 3-53
W. SET
VREF Ⓗ
VREF Ⓛ
MF VR1A
MF VR2A
FADE
AF / MF
TO LENS DRIVE / Page: 3-38
NOREG
CAM 5V
CAM 9V
ANA. GND
D. GND
IRIS OPEN
ZENC1
VREF (+)
VREF (-)
VREF +T
VREF -T
IR DET
CW/CCW
CK
RESET
ENABLE
NOREG GND
PWMA
FNO
HOLE BIAS
HOLE GAIN
TELE
WIDE
ZENC4
DAC VCC
Z SPEED
VREF Ⓛ
VREF Ⓗ
LED CNT
CAM 3.5V
ABSF
F · LINE
CAM -8V
CAM 18V
NOREG
CAM 9V
CAM 3.5V
CAM 5V
Y · LINE
C · LINE
A · LINE
D · LINE
G · LINE
Z ENC 1
IC302
MN673221
(AD/DSP)
DIGITAL VIDEO SIGNAL DATA
DIGITAL VIDEO SIGNAL IN
DIGITAL Y OUT
DIGITAL C OUT
DATA
ADDRESS
IC302-97 STOP 3.2Vp-p (H•RATE)
IC302-90 STOP 3.5Vp-p (H•RATE)
IC302-32 STOP 3.0Vp-p (0.1µsec./div.)
IC302-29 STOP 2.6Vp-p (H•RATE) RAMP GENERATOR
Q302
XP4601
(AMP)
IC306
MN73512XWAS
(SSG)
IC306-1 STOP 3.4Vp-p (V•RATE)
IC306-45 STOP 3.4Vp-p (H•RATE)
IC307
M62353GP
IC308
M62353GP
IC304
TC9074F
(AF SIGNAL PROCESSOR)
DIGITA VIDEO SIGNAL IN
IC302-35 STOP 3.2Vp-p (H•RATE)
IC302-36 STOP 3.2Vp-p (H•RATE)
HD 1.7Vp-p
IC302-9 3.4Vp-p
IC302-8 3.4Vp-p
IC302-7 3.4Vp-p
IC302-6 3.4Vp-p
STOP (H • RATE) RAMP GENERATOR
L309 VLP0140
L308 6.8µ
L301 6.8µ
L302 VLP0140
L303 6.8µ
L304 6.8µ
L305 6.8µ
L319 VLP0140
L317 6.8µ
L316 6.8µ
L314 6.8µ
L318 6.8µ
L310 6.8µ
R301 220
R305 1K
R389 4.7
R304 1K
R356 100
R355 100
R359 680
R358 100
R357 100
R307 1K
R387 2700
R388 5600
R375 1K
R376 1K
R370 1K
R378 1K
R379 1K
R380 1K
R381 1K
R382 1K
R383 1K
R377 1K
R342 56K
R302 22K
R303 22K
R326 47K
R327 47K
R328 47K
RA301 1K×4
RA302 1K×4
RA303 1K×4
RA304 1K×4
C310 0.1
C301 82P
C303 1
C305 0.1
C304 6V10
C302 1
C352 68P
C351 56P
C350 1
C348 56P
C360 56P
C347 1000P
C346 1
C361 1
C307 0.22
C308 150P
C345 1
C323 6V10
C326 0.1
C334 6V10
C332 0.1
CL304
CL305
CL303
CL316
CL307
CL311
CL310
CL308
CL309
(FNO)
(V REF Ⓗ)
(G 8) (G 9)
(G10)(G11)
(G12)(G13)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11


F · LINE
CAM -8V
CAM 18V
NOREG
CAM 9V
CAM 3.5V
CAM 5V
C · LINE
Y · LINE
A · LINE
G · LINE
(F6)
(F8)
(F1)
(F9)
(F7)
(F10)
IC303
MN65702H
(D/A)
IC303-21 STOP
0.5Vp-p (H·RATE)
COLOUR BAR
IC303-23 STOP
0.8Vp-p (H·RATE) COLOUR BAR
IC303-18 STOP
1.0Vp-p (H·RATE) COLOUR BAR
IC306-1 STOP
.4Vp-p (V·RATE)
IC306-45 STOP
3.4Vp-p (H·RATE)
IC302-36 STOP
3.2Vp-p (H·RATE)
DIGITA VIDEO
SIGNAL IN
ADDRESS
X301
VSX0589
or EFOS1605E5
HD 1.7Vp-p
IC302-67 3.4Vp-p
IC302-68 3.4Vp-p
IC302-69 3.4Vp-p
IC302-70 3.4Vp-p
STOP (H·RATE) RAMP GENERATOR
IC305
MN1864002M2B
DATA
IC309
X25040S
Q301
XP4501
(AMP)
QR301
UN9212
(SERIAL DATA
I/O SELECT)
D301
MA728
D303
MA728
D304
MA728
D305
MA110
D306
MA728
L311
VLP0140
L312
22μ
L313
6.8μ
L315
6.8μ
L310
6.8μ
L321
6.8μ
L325
39μ
(FNO)
(V REF Ⓗ)
(V REF Ⓛ)
(G3)
(G2)
(G14)
(G15)
(G13)(G1)
(G16)
(G8)(G11)(G10)
(G7)
(G9)
(G12)
(G15)
(G16)
(G5)
(G14)
(G6)
(G4)
10
11
12
13
14
15
16
17
18
19
20
21



F · LINE
(F 8)
CAM -8V
CAM 18V
NOREG
CAM 5V
CAM 9V
CAM 3.5V
(F 7)
(F10)
TO LUMI. CHRO / Page:3-48
B-Y
R-Y
CAM.Y
B-Y.BAL
R-Y.BAL
REC.Y.VR
REC.C.VR
C312 6V10
C313 1000P
C314 0.01
R312 12K
C315 0.1
L325 39μ
L313 6.8μ
R311 18K
C322 6V10
C318 1
CL319
CL318
CL317
CL314
CL315
CL313
C IN
Y IN
IC303-23 STOP
0.8Vp-p (H-RATE) COLOUR BAR
CL321
303
65702H
CL320
C320 1
C319 1
C370 6V10
R315 10K
R317 1K
R316 1200
Q301
XP4501
(AMP)
R318 4700
R320 1200
R314 18K
R313 12K
R321 1K
C316 0.1
C317 0.1
R371 12K
R319 4700
R310 22K
R323 100K
R322 4700
R336 4700
TO POWER / Page:3-40
NOREG
NOREG GND
CAM 9V
CAM -8V
CAM 18V
CAM 5V
ANA.GND
CAM 3.5V
DIGI.GND
TL301
TO SYSTEM CTL / Page:3-43
CAM RESET
CAM TEST
CAM DATA
CAM CLOCK
S/S
CAM.P.SW
EE Ⓛ
D306 MA728
R391 10K
CAM 3.5V
A · LINE
R348 47K
R349 47K
R350 47K
R351 47K
R352 47K
R353 47K
R354 47K
R392 68K
R331 4700
IC309
X25040S
CS SO WP GND
VCC HOLD CK SI
MF NEAR
MF FAR
WIDE
TELE
DATE
BLC
MODE2
MODE1
MODE0
NC
NWE
NRE
VDD
DB 0 DB 1 DB 2 DB 3 DB 4 DB 5 DB 6 DB 7
DATA
ADDRESS
AB 0 AB 1 AB 2 AB 3 AB 4 AB 5 AB 6 AB 7 AB 8
VMD3 VMD2 VMD1
AB12 AB13 AB14
VSS (PB7) IR IN TEST (PB4) (PB3) E2PROM CS (PB1) EXI
CL301
IC305
MN1864002M2B
HD 1.7Vp-p
IC303-18 STOP
1.0Vp-p (H-RATE) COLOUR BAR
IC302-67 3.4Vp-p
IC302-68 3.4Vp-p
IC302-69 3.4Vp-p
IC302-70 3.4Vp-p
STOP (H-RATE) RAMP GENERATOR
R330 4700
R329 4700
R374 2200
R332 33K
R360 56K
QR301
UN9212
(SERIAL DATA)
(I/O SELECT)
D303 MA728
VREF AVSS VSS V11 (TELE) V12 (WIDE) HD AE CNT LED CNT ABSF AF STROBE MF LED CNT VTR SBT VTR SBO VTR SBI DIS SBT DIS STO DIS SBI VDD DAC SBT DAC SBO
CL302
C331 0.1
C335 6V10
R333 22K
R334 47K
R335 47K
(G13)(G 1)
(G16)
(G 8)(G11)(G10)
(G 7)
(G 9)
(G12)
G · LINE
R385 10K
D305 MA110
R361 4700
(G 4)
(G 6)
(G 5)
(G14)
(G16)
(G15)
D304 MA728
P303 (K)
S/S
CAM.P.SW
P.SW (-)
VREF Ⓗ
Z SPEED
VREF Ⓛ
B302 TO EVR (H)
CAM CLOCK
SIO
VD
Y
CDS OUT
AD IN
VREF Ⓗ
VREF (+)
OP2
WIDE
IRIS OPEN
RESET
GND (ANA)
CAM 5V
TELE
Z.ENC1
VREF (-)
VREF Ⓛ
SUB
AGC IN
AF CLOCK
AF DATA
CAM TEST
GND (DIGI)
S/S
CAM. POWER
S6701 VMG0763
S6702 ESE105MH7
OFF ON
PJ6701
S/S
CAM.P.SW
P.SW (-)
S/S & POWER SW C.B.A. (VEP00T11C)
VREF Ⓗ
Z.SPEED
VREF Ⓛ
ZOOM VR
ZOOM BUTTON UNIT (VXU1192)
15
16
17
18
19
20
21
22
23
24
25

VIDEO SIGNAL

DIGITAL Y SIGNAL

DIGITAL C SIGNAL

Y SIGNAL

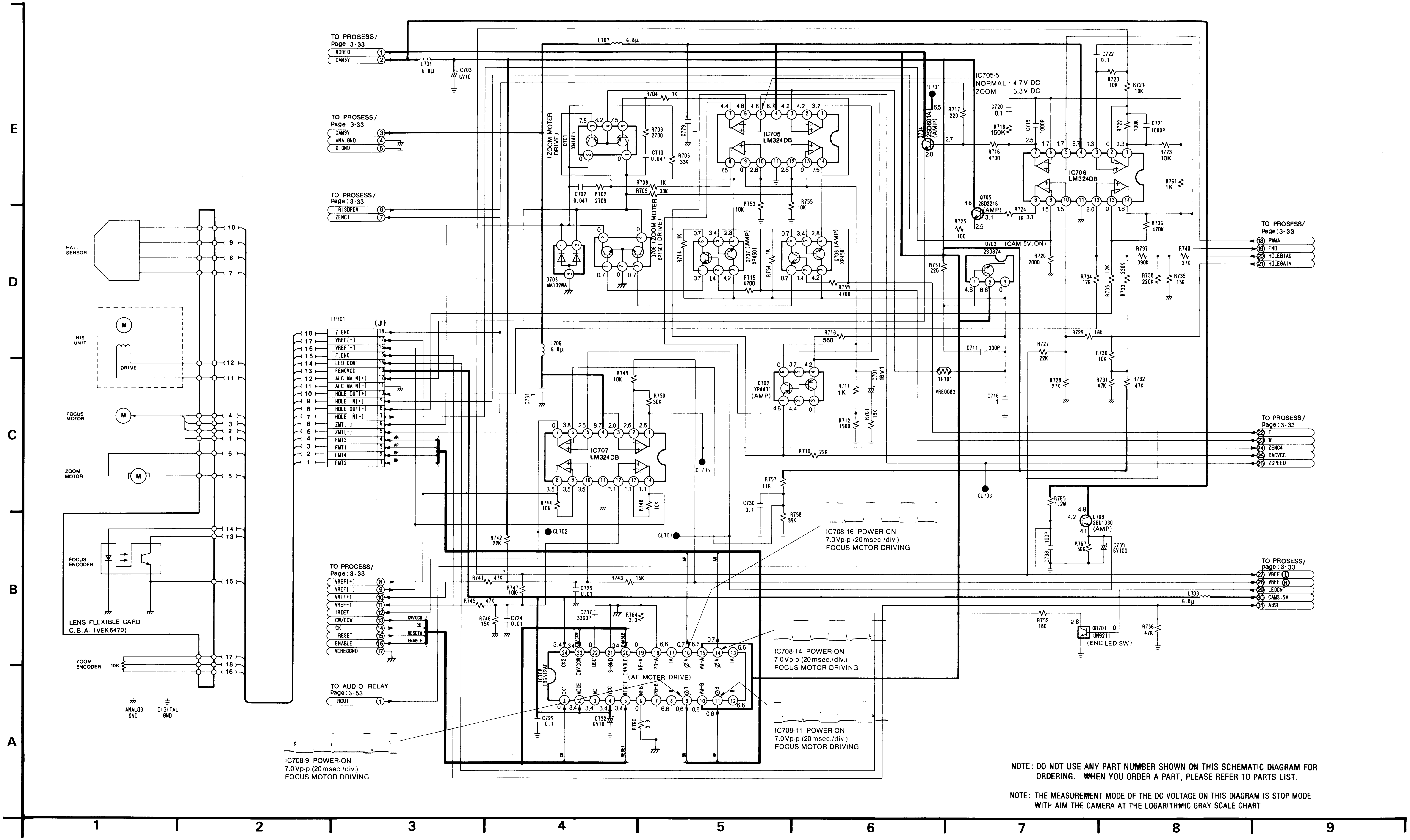
R-Y SIGNAL

B-Y SIGNAL

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

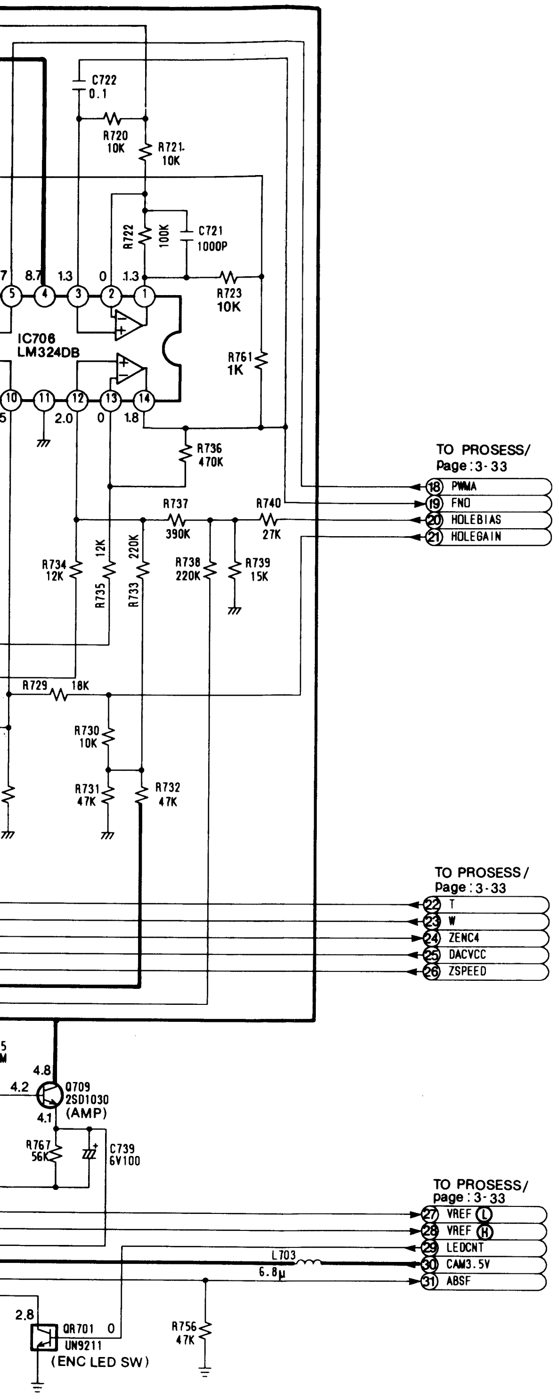
3-16. LENS DRIVE SCHEMATIC DIAGRAM


TO PROSESS/ Page:3-33
NOREG
CAM5V
L701 6.8μ
C703 6V10
L707 6.8μ
TO PROSESS/ Page:3-33
CAM9V
ANA.GND
D.GND
TO PROSESS/ Page:3-33
IRISOPEN
ZENC1
HALL SENSOR
IRIS UNIT
DRIVE
FOCUS MOTOR
ZOOM MOTOR
FOCUS ENCODER
LENS FLEXIBLE CARD C.B.A. (VEK6470)
ZOOM ENCODER 10K
ANALOG GND
DIGITAL GND
FP701
(J)
Z.ENC
VREF(+)
VREF(-)
F.ENC
LED CONT
FENCVCC
ALC MAIN(+)
ALC MAIN(-)
HOLE OUT(+)
HOLE IN(+)
HOLE OUT(-)
HOLE IN(-)
ZMT(+)
ZMT(-)
FMT3
FMT1
FMT4
FMT2
AN
AP
BP
BN
(ZOOM MOTER DRIVE)
Q701 XN1401
R704 1K
R703 2700
C710 0.047
R705 33K
C779 1
C702 0.047
R702 2700
R708 1K
R709 33K
D703 MA132WA
Q706 XP1501 (ZOOM MOTER DRIVE)
IC705 LM324DB
R753 10K
R755 10K
R714 1K
Q707 (AMP) XP4501
R715 4700
R754 1K
Q708 (AMP) XP4501
R759 4700
TL701
Q704 2SD601A (AMP)
IC705-5 NORMAL : 4.7V DC ZOOM : 3.3V DC
R717 220
C720 0.1
R718 150K
C719 1000P
R716 4700
C722 0.1
R720 10K
R721 10K
R722 100K
C721 1000P
R723 10K
IC706 LM324DB
R761 1K
Q705 2SD2216 (AMP)
R724 1K
R725 100
Q703 (CAM 5V:ON) 2SD874
R726 2000
R751 220
R736 470K
R737 390K
R740 27K
R734 12K
R735 12K
R733 220K
R738 220K
R739 15K
TO PROSESS/ Page:3-33
PWMA
FND
HOLEBIAS
HOLEGAIN
L706 6.8μ
C731 1
R749 10K
R750 30K
IC707 LM324DB
R744 10K
R748 10K
R713 560
Q702 XP4401 (AMP)
R711 1K
C701 16V1
R712 1500
R701 15K
C711 330P
TH701 VRE0083
C716 1
R727 22K
R729 18K
R730 10K
R728 27K
R731 47K
R732 47K
TO PROSESS/ Page:3-33
T
W
ZENC4
DACVCC
ZSPEED
R710 22K
CL705
CL703
R757 11K
C730 0.1
R758 39K
CL701
CL702
R742 22K
R765 1.2M
Q709 2SD1030 (AMP)
C738 100P
R767 56K
C739 6V100
TO PROCESS/ Page:3-33
VREF(+)
VREF(-)
VREF+T
VREF-T
IRDET
CW/CCW
CK
RESET
ENABLE
NOREGGND
R741 47K
R747 10K
R743 15K
C725 0.01
R745 47K
R746 15K
C724 0.01
C737 3300P
R764 3.3
IC708 TB6512AF (AF MOTER DRIVE)
CK2
CW/CCW
OSC
S-GND
ENABLE
NF-A
PO-A
IA
ØA
VM-A
ØA
IA
CK1
MODE
MO
VCC
RESET
NFB
PO-B
IB
ØB
VM-B
ØB
IB
C729 0.1
C732 6V10
R760 3.3
TO PROSESS/ page:3-33
VREF (L)
VREF (H)
LEDCNT
CAM3.5V
ABSF
L703 6.8μ
R752 180
QR701 UN9211 (ENC LED SW)
R756 47K
TO AUDIO RELAY Page:3-53
IROUT
IC708-16 POWER-ON 7.0Vp-p (20msec./div.) FOCUS MOTOR DRIVING
IC708-14 POWER-ON 7.0Vp-p (20msec./div.) FOCUS MOTOR DRIVING
IC708-11 POWER-ON 7.0Vp-p (20msec./div.) FOCUS MOTOR DRIVING
IC708-9 POWER-ON 7.0Vp-p (20msec./div.) FOCUS MOTOR DRIVING
A
B
C
D
E
1
2
3
4
5
6
7
8
9

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

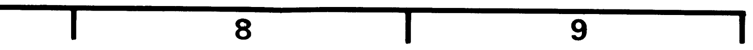
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

Back Page:
PROCESS Section

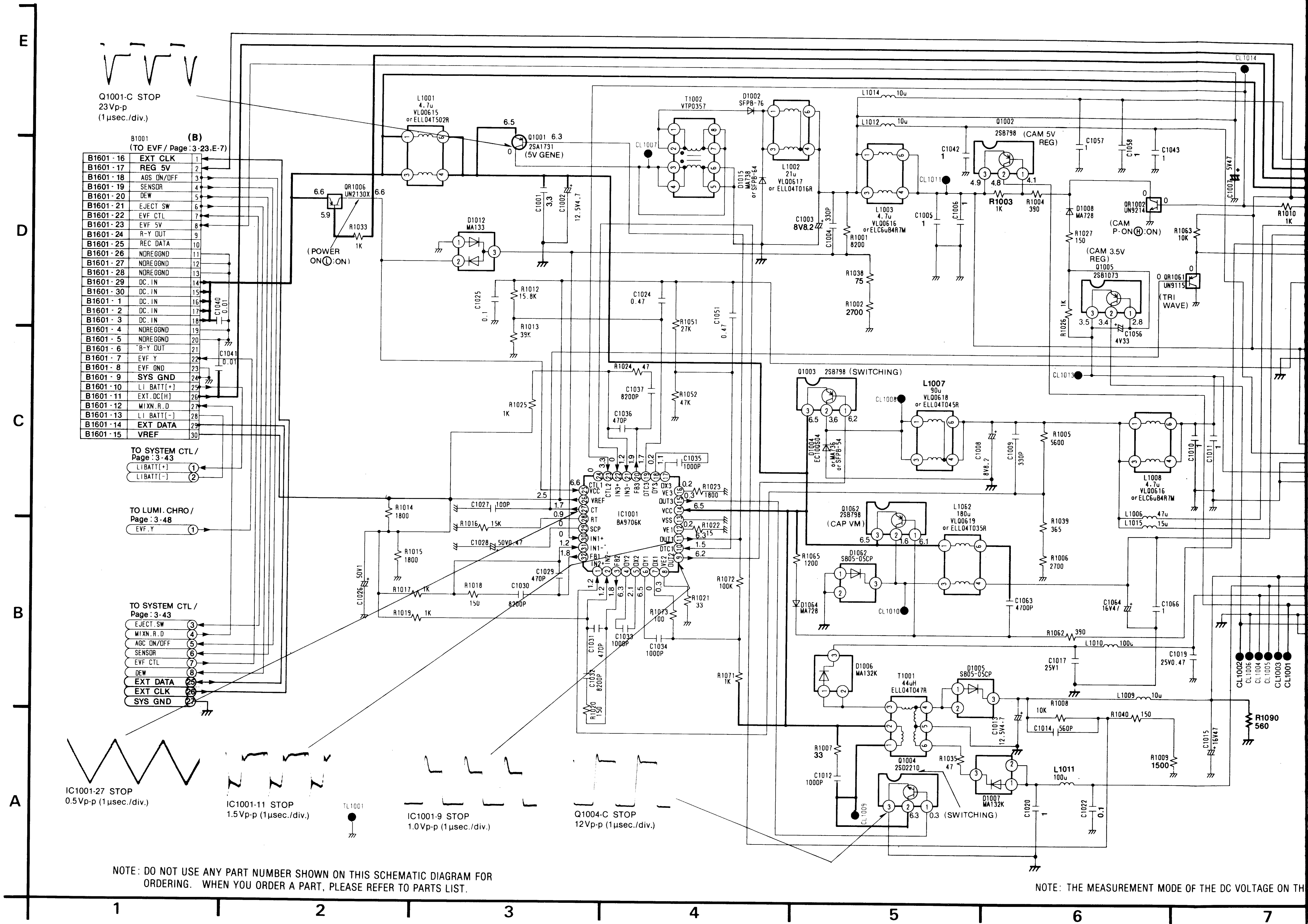

C722
0.1
R720
10K
R721
10K
R722
100K
C721
1000P
R723
10K
IC706
LM324DB
R761
1K
R736
470K
TO PROSESS/
Page: 3-33
PWMA
FND
HOLEBIAS
HOLEGAIN
R737
390K
R740
27K
R734
12K
R735
R733
R738
220K
R739
15K
R729
18K
R730
10K
R731
47K
R732
47K
TO PROSESS/
Page: 3-33
T
W
ZENC4
DACVCC
ZSPEED
Q709
2SD1030
(AMP)
R767
56K
C739
6V100
TO PROSESS/
page: 3-33
VREF (L)
VREF (H)
LEDCNT
CAM3.5V
ABSF
L703
6.8μ
QR701
UN9211
(ENC LED SW)
R756
47K

USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
NG. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

ASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE
M THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.



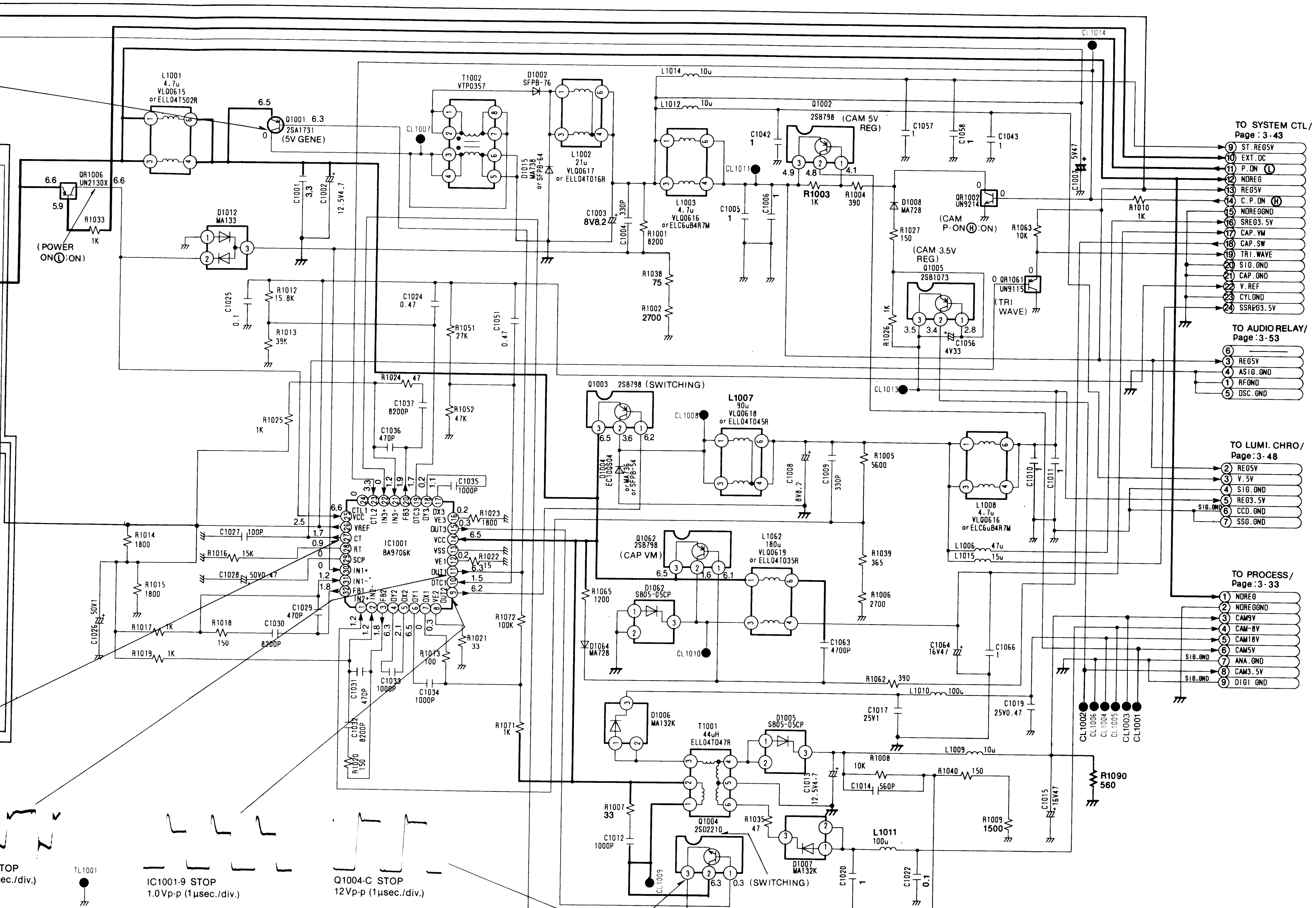
3-17. POWER SCHEMATIC DIAGRAM


E
D
C
B
A
1
2
3
4
5
6
7
Q1001-C STOP
23Vp-p
(1μsec./div.)
B1001 (B)
(TO EVF/ Page: 3-23, E-7)
B1601-16 EXT CLK 1
B1601-17 REG 5V 2
B1601-18 AGS ON/OFF 3
B1601-19 SENSOR 4
B1601-20 DEW 5
B1601-21 EJECT SW 6
B1601-22 EVF CTL 7
B1601-23 EVF 5V 8
B1601-24 R-Y OUT 9
B1601-25 REC DATA 10
B1601-26 NOREGGND 11
B1601-27 NOREGGND 12
B1601-28 NOREGGND 13
B1601-29 DC.IN 14
B1601-30 DC.IN 15
B1601-1 DC.IN 16
B1601-2 DC.IN 17
B1601-3 DC.IN 18
B1601-4 NOREGGND 19
B1601-5 NOREGGND 20
B1601-6 B-Y OUT 21
B1601-7 EVF Y 22
B1601-8 EVF GND 23
B1601-9 SYS GND 24
B1601-10 LI BATT(+) 25
B1601-11 EXT.DC(H) 26
B1601-12 MIXN.R.D 27
B1601-13 LI BATT(-) 28
B1601-14 EXT DATA 29
B1601-15 VREF 30
TO SYSTEM CTL/
Page: 3-43
LIBATT(+)
LIBATT(-)
TO LUMI. CHRO/
Page: 3-48
EVF.Y
TO SYSTEM CTL/
Page: 3-43
EJECT.SW
MIXN.R.D
AGC ON/OFF
SENSOR
EVF CTL
DEW
EXT DATA
EXT CLK
SYS GND
QR1006
UN2130X
(POWER
ON(L):ON)
R1033
1K
L1001
4.7u
VLQ0615
or ELL04T502R
Q1001
2SA1731
(5V GENE)
D1012
MA133
T1002
VTP0357
D1002
SFPB-76
L1002
21u
VLQ0617
or ELL04T016R
D1015
MA728
or SFPB-64
C1003
8V8.2
R1001
8200
L1014 10u
L1012 10u
Q1002
2SB798 (CAM 5V REG)
L1003
4.7u
VLQ0616
or ELC6uB4R7M
R1003
1K
R1004
390
D1008
MA728
R1027
150
QR1002
UN9214
(CAM
P-ON(H):ON)
(CAM 3.5V
REG)
Q1005
2SB1073
C1056
4V33
QR1061
UN9115
(TRI
WAVE)
R1063
10K
R1010
1K
R1038
75
R1002
2700
R1012
15.8K
R1013
39K
C1024
0.47
R1051
27K
R1024 47
C1037
8200P
R1052
47K
R1025
1K
C1036
470P
C1035
1000P
R1023
1800
IC1001
BA9706K
CTL1
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
IN2+
OUT3
VCC
VSS
VE1
OUT1
DTC1
R1022
15
R1014
1800
R1015
1800
C1027 100P
R1016 15K
C1028 50V0.47
C1029
470P
R1018
150
C1030
8200P
R1017 1K
R1019 1K
C1031
470P
C1032
8200P
C1033
1000P
R1073
100
C1034
1000P
R1021
33
R1020
150
R1072
100K
R1071
1K
Q1003 2SB798 (SWITCHING)
L1007
90u
VLQ0618
or ELL04T045R
D1004
EC10QS04
or MA735
or SFPB-54
C1008
8V8.2
C1009
330P
R1005
5600
L1008
4.7u
VLQ0616
or ELC6uB4R7M
Q1062
2SB798
(CAP VM)
L1062
180u
VLQ0619
or ELL04T035R
D1062
SB05-05CP
R1065
1200
D1064
MA728
R1039
365
R1006
2700
C1063
4700P
C1064
16V47
C1066
1
L1006 47u
L1015 15u
R1062 390
L1010 100u
C1019
25V0.47
C1017
25V1
D1006
MA132K
T1001
44uH
ELL04T047R
D1005
SB05-05CP
R1008
10K
R1040 150
C1014 560P
L1009 10u
R1007
33
C1012
1000P
Q1004
2SD2210
R1035
47
D1007
MA132K
(SWITCHING)
L1011
100u
C1020
1
C1022
0.1
R1009
1500
C1015
16V47
R1090
560
CL1002
CL1006
CL1004
CL1005
CL1003
CL1001
TL1001
IC1001-27 STOP
0.5Vp-p (1μsec./div.)
IC1001-11 STOP
1.5Vp-p (1μsec./div.)
IC1001-9 STOP
1.0Vp-p (1μsec./div.)
Q1004-C STOP
12Vp-p (1μsec./div.)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON TH

IC DIAGRAM

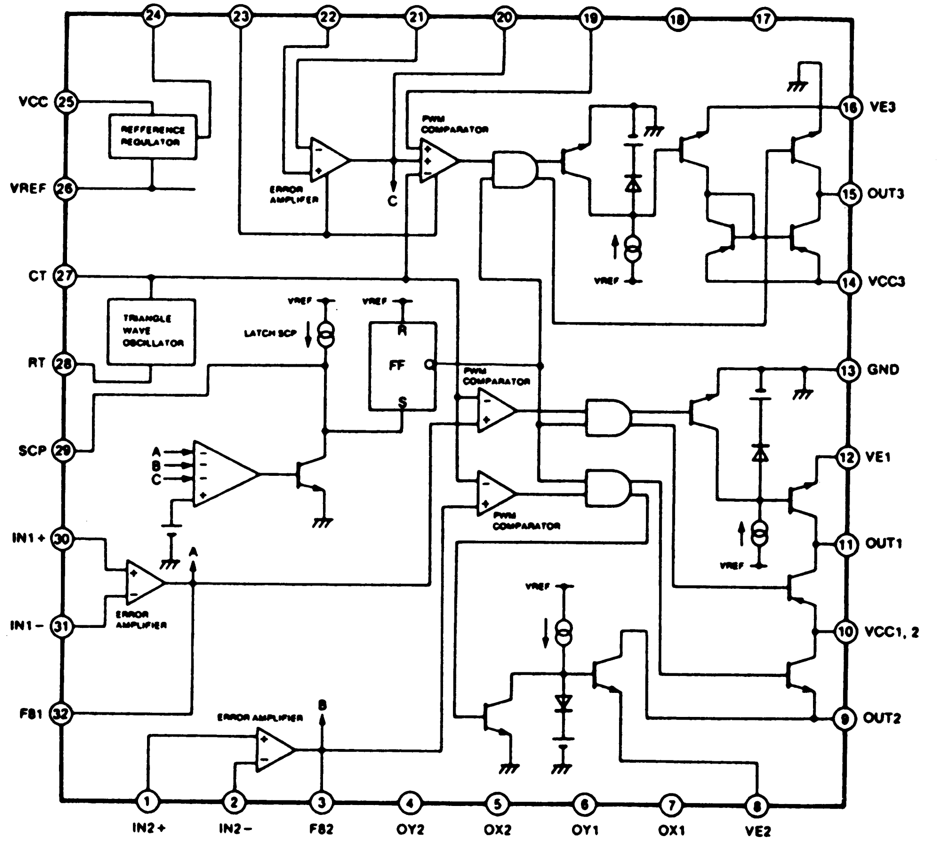

L1001 4.7u VLQ0615 or ELL04T502R
Q1001 2SA1731 (5V GENE)
6.5
6.3
QR1006 UN2130X
6.6
5.9
R1033 1K
(POWER ON Ⓛ:ON)
D1012 MA133
C1001 3.3
C1002 12.5V4.7
C1025 0.1
R1012 15.8K
R1013 39K
C1024 0.47
R1051 27K
C1051 0.47
R1024 47
C1037 8200P
C1036 470P
R1052 47K
R1025 1K
T1002 VTP0357
CL1007
D1002 SFPB-76
D1015 MA738 or SFPB-64
L1002 21u VLQ0617 or ELL04T016R
C1003 8V8.2
C1004 330P
R1001 8200
R1038 75
R1002 2700
L1014 10u
L1012 10u
L1003 4.7u VLQ0616 or ELC6uB4R7M
CL1011
C1005 1
C1006 1
C1042 1
Q1002 2SB798 (CAM 5V REG)
4.9
4.8
4.1
R1003 1K
R1004 390
C1057 1
C1058 1
C1043 1
C1007 5V47
CL1014
D1008 MA728
R1027 150
QR1002 UN9214
(CAM P-ON Ⓗ:ON)
R1010 1K
R1063 10K
(CAM 3.5V REG)
Q1005 2SB1073
3.5
3.4
2.8
C1056 4V33
R1026 1K
QR1061 UN9115
(TRI WAVE)
CL1013
TO SYSTEM CTL/ Page : 3-43
⑨ ST.REG5V
⑩ EXT.DC
⑪ P.ON Ⓛ
⑫ NOREG
⑬ REG5V
⑭ C.P.ON Ⓗ
⑮ NOREGGND
⑯ SREG3.5V
⑰ CAP.VM
⑱ CAP.SW
⑲ TRI.WAVE
⑳ SIG.GND
㉑ CAP.GND
㉒ V.REF
㉓ CYLGND
㉔ SSREG3.5V
TO AUDIO RELAY/ Page : 3-53
⑥ ——
③ REG5V
④ ASIG.GND
① RFGND
⑤ DSC.GND
TO LUMI. CHRO/ Page : 3-48
② REG5V
③ V.5V
④ SIG.GND
⑤ REG3.5V
⑥ CCD.GND
⑦ SSG.GND
SIG_GND
TO PROCESS/ Page : 3-33
① NOREG
② NOREGGND
③ CAM9V
④ CAM-8V
⑤ CAM18V
⑥ CAM5V
⑦ ANA.GND
⑧ CAM3.5V
⑨ DIGI GND
SIG_GND
SIG_GND
Q1003 2SB798 (SWITCHING)
6.5
3.6
6.2
D1004 EC10QS04 or MA736 or SFPB-54
CL1008
L1007 90u VLQ0618 or ELL04T045R
C1008 8V8.2
C1009 330P
R1005 5600
R1039 365
R1006 2700
L1008 4.7u VLQ0616 or ELC6uB4R7M
C1010 1
C1011 1
L1006 47u
L1015 15u
Q1062 2SB798 (CAP VM)
6.5
1.6
6.1
L1062 180u VLQ0619 or ELL04T035R
D1062 SB05-05CP
R1065 1200
D1064 MA728
CL1010
C1063 4700P
C1064 16V47
C1066 1
R1062 390
L1010 100u
C1017 25V1
C1019 25V0.47
CL1002
CL1006
CL1004
CL1005
CL1003
CL1001
IC1001 BA9706K
CTL1
CTL2
IN3+
IN3-
FB3
DTC3
DY3
DX3
VE3
OUT3
VCC
VSS
VE1
OUT1
DTC1
OUT2
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
IN2+
IN2-
FB2
DY2
DX2
DY1
DX1
VE2
0
3.3
0
1.2
1.9
1.7
0.2
1.1
6.6
2.5
1.7
0.9
0
0
1.2
1.8
0.2
0.3
6.5
0.2
6.3
1.5
6.2
1.2
1.2
1.8
6.3
2.1
6.5
0
0.3
C1035 1000P
R1023 1800
R1022 15
R1014 1800
R1015 1800
C1027 100P
R1016 15K
C1028 50V0.47
C1029 470P
C1026 50V1
R1017 1K
R1018 150
C1030 8200P
R1019 1K
R1021 33
R1072 100K
R1073 100
C1031 470P
C1033 1000P
C1034 1000P
C1032 8200P
R1020 150
R1071 1K
D1006 MA132K
T1001 44uH ELL04T047R
D1005 SB05-05CP
C1013 12.5V4.7
R1008 10K
C1014 560P
R1040 150
L1009 10u
R1090 560
C1015 16V47
R1009 1500
R1007 33
C1012 1000P
Q1004 2SD2210
R1035 47
D1007 MA132K
L1011 100u
C1020 1
C1022 0.1
CL1009
6.3
0.3 (SWITCHING)
TOP
ec./div.)
TL1001
IC1001-9 STOP
1.0Vp-p (1μsec./div.)
Q1004-C STOP
12Vp-p (1μsec./div.)
2
3
4
5
6
7

BER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
ER A PART, PLEASE REFER TO PARTS LIST.

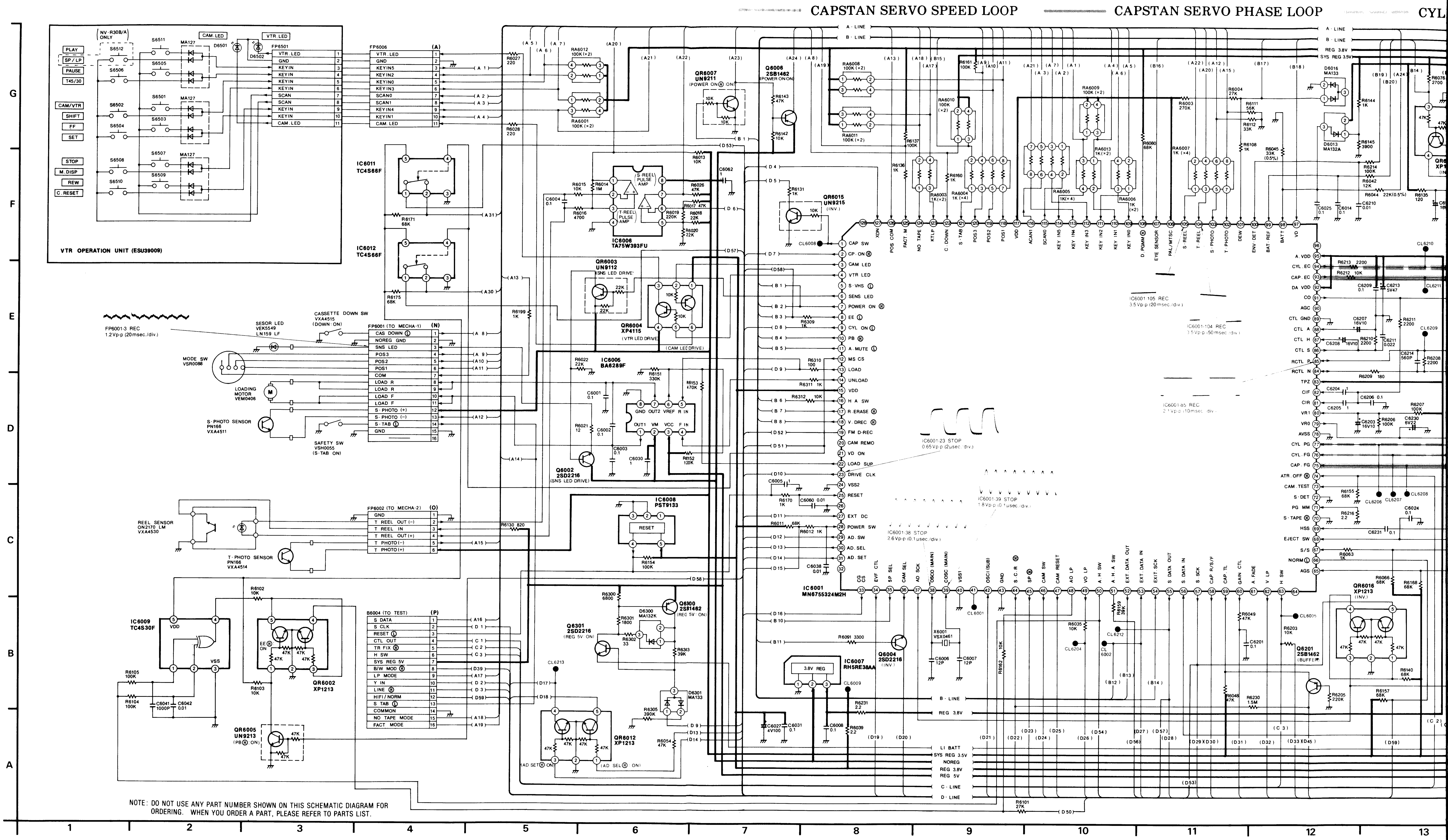
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IC BLOCK

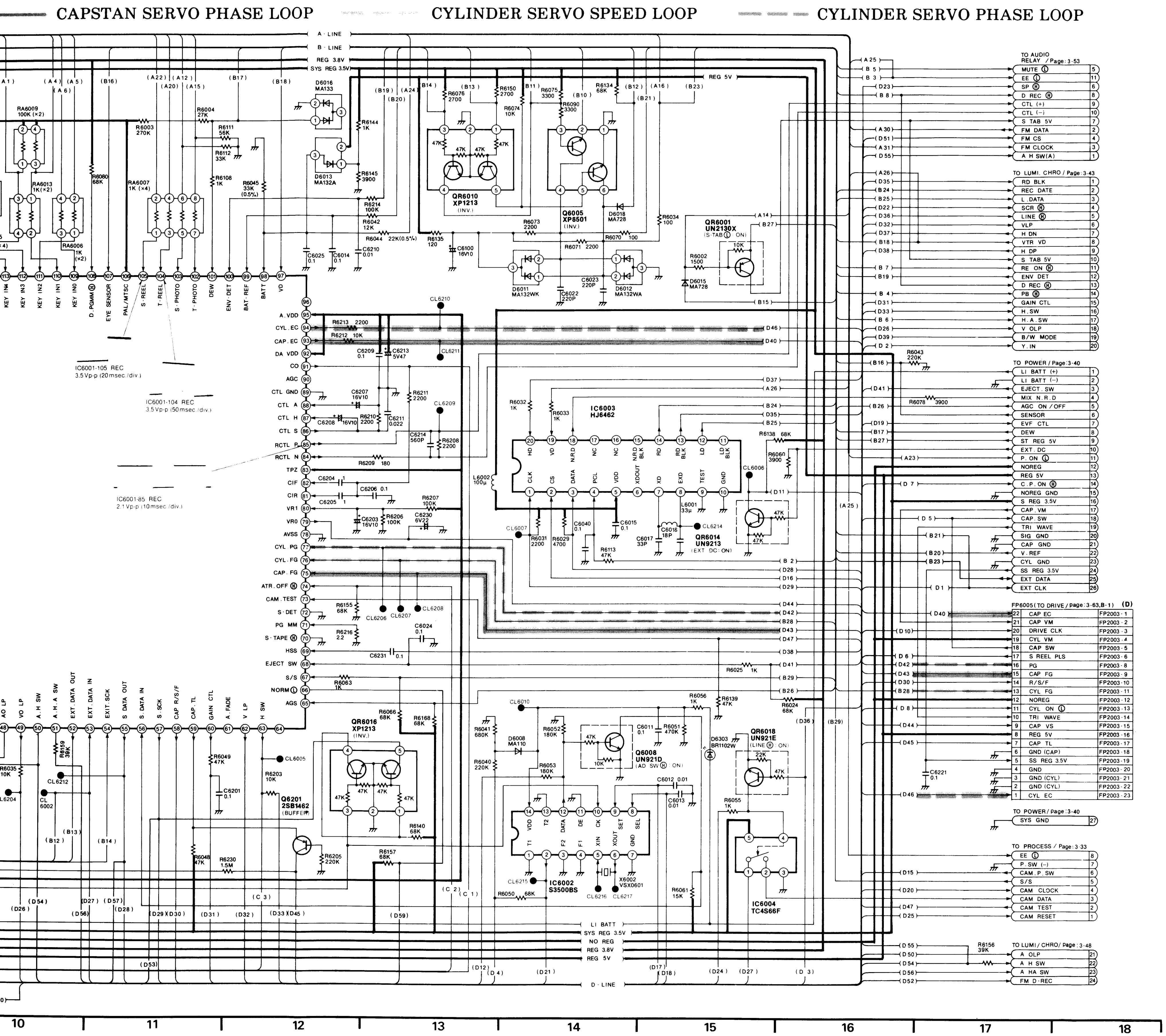
IC1001 (BA9706K)


CTL1
CTL2
IN3+
IN3-
FB3
DTC3
OY3
OX3
24
23
22
21
20
19
18
17
VCC 25
VREF 26
CT 27
RT 28
SCP 29
IN1+ 30
IN1- 31
FB1 32
16 VE3
15 OUT3
14 VCC3
13 GND
12 VE1
11 OUT1
10 VCC1, 2
9 OUT2
1
2
3
4
5
6
7
8
IN2+
IN2-
FB2
OY2
OX2
OY1
OX1
VE2
REFFERENCE REGULATOR
ERROR AMPLIFIER
C
PWM COMPARATOR
VREF
TRIANGLE WAVE OSCILLATOR
LATCH SCP
VREF
VREF
R
FF
Q
S
PWM COMPARATOR
PWM COMPARATOR
A
B
C
A
ERROR AMPLIFIER
VREF
VREF
ERROR AMPLIFIER
B

3-18. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM

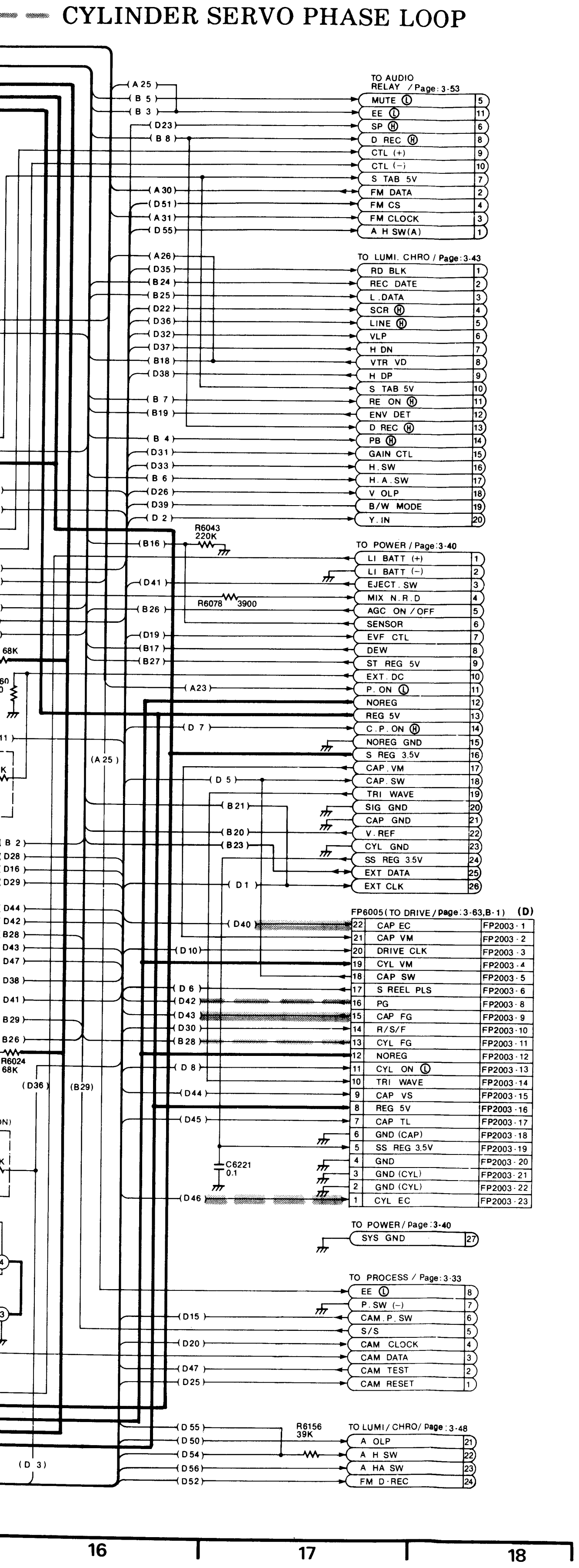

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYL
VTR OPERATION UNIT (ESU39009)
NV-R30B/A ONLY
PLAY
SP/LP
PAUSE
T45/30
CAM/VTR
SHIFT
FF
SET
STOP
M.DISP
REW
C.RESET
CAM.LED
VTR.LED
FP6501
FP6006
IC6011 TC4S66F
IC6012 TC4S66F
IC6006 TA75W393FU
S.REEL PULSE AMP
T.REEL PULSE AMP
QR6007 UN9211 (POWER ON Ⓗ ON)
Q6006 2SB1462 (POWER ON/ON)
QR6015 UN9215 (INV.)
QR6003 UN9112 (SNS LED DRIVE)
QR6004 XP4115 (VTR LED DRIVE) (CAM LED DRIVE)
IC6005 BA6289F
Q6002 2SD2216 (SNS LED DRIVE)
IC6008 PST9133
RESET
Q6300 2SB1462 (REC 5V ON)
Q6301 2SD2216 (REC 5V ON)
QR6012 XP1213 (AD SET Ⓗ ON) (AD SEL Ⓗ ON)
IC6009 TC4S30F
QR6002 XP1213
QR6005 UN9213 (PB Ⓗ ON)
IC6007 RH5RE38AA
3.8V REG
Q6004 2SD2216 (INV.)
IC6001 MN6755324M2H
X6001 VSX0451
QR6016 XP1213 (INV.)
Q6201 2SB1462 (BUFFER)
FP6001-3 REC 1.2Vp-p (20msec./div.)
SESOR LED VEK5549 LN159 LF
CASSETTE DOWN SW VXA4515 (DOWN: ON)
MODE SW VSR0088
LOADING MOTOR VEM0406
S-PHOTO SENSOR PN166 VXA4511
SAFETY SW VSH0055 (S-TAB ON)
FP6001 (TO MECHA-1)
FP6002 (TO MECHA-2)
REEL SENSOR ON2170 LM VXA4530
T-PHOTO SENSOR PN166 VXA4514
B6004 (TO TEST)
IC6001-105 REC 3.5Vp-p (20msec./div.)
IC6001-104 REC 3.5Vp-p (50msec./div.)
IC6001-85 REC 2.1Vp-p (10msec./div.)
IC6001-23 STOP 0.65Vp-p (2usec./div.)
IC6001-39 STOP 1.8Vp-p (0.1usec./div.)
IC6001-38 STOP 2.6Vp-p (0.1usec./div.)
A-LINE
B-LINE
REG 3.8V
SYS REG 3.5V
LI BATT
NOREG
REG 5V
C-LINE
D-LINE
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.


CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
A - LINE
B - LINE
REG 3.8V
SYS REG 3.5V
REG 5V
D - LINE
LI BATT
SYS REG 3.5V
NO REG
REG 3.8V
REG 5V
IC6001-105 REC 3.5Vp-p (20msec/div.)
IC6001-104 REC 3.5Vp-p (50msec/div.)
IC6001-85 REC 2.1Vp-p (10msec/div.)
IC6003 HJ6462
IC6002 S3500BS
IC6004 TC4S66F
QR6010 XP1213 (INV.)
Q6005 XP8501 (INV.)
QR6001 UN2130X (S.TAB Ⓛ ON)
QR6014 UN9213 (EXT DC:ON)
QR6016 XP1213 (INV.)
Q6008 UN921D (AD SW Ⓗ ON)
QR6018 UN921E (LINE Ⓗ ON)
Q6201 2SB1462 (BUFFER)
D6016 MA133
D6013 MA132A
D6011 MA132WK
D6012 MA132WA
D6018 MA728
D6015 MA728
D6008 MA110
D6303 BR1102W
X6002 VSX0601
TO AUDIO RELAY / Page:3-53
TO LUMI. CHRO / Page:3-43
TO POWER / Page:3-40
FP6005 (TO DRIVE / Page:3-63,B-1) (D)
TO POWER / Page:3-40
TO PROCESS / Page:3-33
TO LUMI / CHRO / Page:3-48
10
11
12
13
14
15
16
17
18

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC6001																	
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STOP	0	3.6	3.7	0	0	3.7	3.6	0	3.7	0	0	0	0	0	3.7	0	0	0
PLAY	0	0	3.7	0	0	3.7	3.7	3.7	0	3.7	3.7	0	0	0	3.7	2.7	0	0
F.F	0	3.6	3.7	0	0	3.3	3.7	0	0	0	0	0	0	0	3.7	2.7	0	0
REF. NO.	IC6001																	
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
STOP	1.6	0	1.8	0	3.7	0	0	0	0	0	0	0	3.1	3.7	2.6	2.3	3.7	1.
PLAY	1.1	0	1.9	0	0	0	0	0	0	0	0	0	3.1	3.2	2.7	2.7	3.7	3.
F.F	1.6	0	1.8	0	3.7	0	0	0	0	0	0	0	3.2	3.7	2.5	2.5	3.7	1.
REF. NO.	IC6001																	
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
STOP	3.7	0	0	0	3.7	1.0	3.7	0	0	0	0	3.1	3.1	3.0	3.3	3.4	2.2	1.
PLAY	0	0.8	0	0	0	0.9	0.9	0.3	0.2	2.8	2.8	3.1	3.2	0	3.2	3.5	3.4	0
F.F	3.7	0	0	0	3.7	1.3	3.7	0	0	3.7	3.7	3.1	0.3	3.0	3.3	3.4	3.4	0.
REF. NO.	IC6001																	
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
STOP	0	0	3.7	0	3.4	0	3.4	0	1.2	0	0.3	0	0.9	0	0	0	0	0
PLAY	0	0	1.7	0	0	0	3.4	3.4	2.0	0	1.2	0	0	1.2	1.7	1.7	0	0
F.F	0	0	2.2	0	3.4	0	3.4	0	0	0	1.0	0	0	0	1.7	1.7	0	0
REF. NO.	IC6001																	
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
STOP	1.6	2.0	3.7	0	0	0	1.8	1.8	0	2.0	1.8	3.7	0.1	3.2	3.7	0	3.4	3.
PLAY	1.8	0	0	0	0	0	1.8	1.8	0	2.0	1.8	3.7	1.6	2.1	3.7	0	3.4	3.
F.F	0	2.0	3.7	0	0	0	1.8	1.8	0	2.0	1.8	3.7	1.5	2.1	3.7	0	3.4	3.
REF. NO.	IC6001																	
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	11
STOP	0	0	0	0	0	3.7	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.
PLAY	0	0	0	3.4	3.4	3.7	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.
F.F	0	0	0	2.0	2.0	3.7	0	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.
REF. NO.	IC6001																	
MODE	121	122	123	124	125	126	127	128										
STOP	0.1	0	3.7	3.7	3.7	0	0	0										
PLAY	0.2	0	3.7	3.7	3.7	0	0	0										
F.F	0.1	0	3.7	3.7	3.7	0	0	0										
REF. NO.	IC6002																	
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
STOP	0	0	0	0	0	0	0	1.6	1.6	3.7	0	0	0	1.6				
PLAY	0	0	0	0	0.4	0	0	0.8	0	0	0	0	0	1.6				
F.F	0	0	0	0	0	0.7	0	1.6	1.6	3.7	0	0	0	1.6				
REF. NO.	IC6003																	
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
STOP	3.3	3.0	3.3	3.6	3.4	0	1.4	1.4	0	0	0	0	0	0	0	0	0	0
PLAY	3.4	0	3.0	3.6	3.4	0	0.8	1.4	0	0	0	0	0	0	0	0	0	0
F.F	3.4	3.0	3.3	0	3.4	0	1.4	1.4	0	0	0	0	0	0	0	0	0	0
REF. NO.	IC6004										IC6005							
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8
STOP	3.2	3.3	0	1.2	3.5						0	6.6	4.9	0	0	3.0	0	0
PLAY	1.7	0.1	0	0	3.5						0.1	6.7	4.9	0	0	3.0	0	0
F.F	3.1	3.3	0	1.2	3.5						0	6.5	4.9	0	0	3.0	0.1	0
REF. NO.	IC6006										IC6007							
MODE	1	2	3	4	5	6	7	8			1	2	3					
STOP	0	0.7	0.6	0	1.7	2.9	0	3.5			0	6.6	3.7					
PLAY	0	0	0	0	1.7	0	3.4	3.5			0	6.7	3.7					
F.F	1.6	0.6	0	0	0	2.9	0	3.5			0	6.5	3.7					
REF. NO.	IC6008										IC6009							
MODE	1	2	3	4	5						1	2	3	4	5			
STOP	0	0	0	3.7	3.7						0	0	0	0	3.3			
PLAY	0	0	0	3.7	3.7						1.7	1.7	0	0.1	3.3			
F.F	0	0	0	3.7	3.7						0	0	0	0	3.3			
REF. NO.	IC6011										IC6012							
MODE	1	2	3	4	5						1	2	3	4	5			
STOP	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3			
PLAY	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3			
F.F	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3			



CYLINDER SERVO PHASE LOOP
TO AUDIO RELAY / Page: 3-53
MUTE Ⓛ 5
EE Ⓛ 11
SP Ⓗ 6
D REC Ⓗ 8
CTL (+) 9
CTL (−) 10
S TAB 5V 7
FM DATA 2
FM CS 4
FM CLOCK 3
A H SW(A) 1
TO LUMI. CHRO / Page: 3-43
RD BLK 1
REC DATE 2
L.DATA 3
SCR Ⓗ 4
LINE Ⓗ 5
VLP 6
H DN 7
VTR VD 8
H DP 9
S TAB 5V 10
RE ON Ⓗ 11
ENV DET 12
D REC Ⓗ 13
PB Ⓗ 14
GAIN CTL 15
H.SW 16
H.A.SW 17
V OLP 18
B/W MODE 19
Y.IN 20
R6043 220K
R6078 3900
TO POWER / Page: 3-40
LI BATT (+) 1
LI BATT (−) 2
EJECT.SW 3
MIX N.R.D 4
AGC ON / OFF 5
SENSOR 6
EVF CTL 7
DEW 8
ST REG 5V 9
EXT. DC 10
P. ON Ⓛ 11
NOREG 12
REG 5V 13
C.P.ON Ⓗ 14
NOREG GND 15
S REG 3.5V 16
CAP.VM 17
CAP.SW 18
TRI WAVE 19
SIG GND 20
CAP GND 21
V.REF 22
CYL GND 23
SS REG 3.5V 24
EXT DATA 25
EXT CLK 26
FP6005 (TO DRIVE / Page: 3-63, B-1) (D)
22 CAP EC FP2003-1
21 CAP VM FP2003-2
20 DRIVE CLK FP2003-3
19 CYL VM FP2003-4
18 CAP SW FP2003-5
17 S REEL PLS FP2003-6
16 PG FP2003-8
15 CAP FG FP2003-9
14 R/S/F FP2003-10
13 CYL FG FP2003-11
12 NOREG FP2003-12
11 CYL ON Ⓛ FP2003-13
10 TRI WAVE FP2003-14
9 CAP VS FP2003-15
8 REG 5V FP2003-16
7 CAP TL FP2003-17
6 GND (CAP) FP2003-18
5 SS REG 3.5V FP2003-19
4 GND FP2003-20
3 GND (CYL) FP2003-21
2 GND (CYL) FP2003-22
1 CYL EC FP2003-23
C6221 0.1
R6024 68K
68K
TO POWER / Page: 3-40
SYS GND 27
TO PROCESS / Page: 3-33
EE Ⓛ 8
P.SW (−) 7
CAM.P.SW 6
S/S 5
CAM CLOCK 4
CAM DATA 3
CAM TEST 2
CAM RESET 1
R6156 39K
TO LUMI / CHRO / Page: 3-48
A OLP 21
A H SW 22
A HA SW 23
FM D-REC 24
A25
B5
B3
D23
B8
A30
D51
A31
D55
A26
D35
B24
B25
D22
D36
D32
D37
B18
D38
B7
B19
B4
D31
D33
B6
D26
D39
D2
B16
D41
B26
D19
B17
B27
A23
D7
D5
B21
B20
B23
D1
D40
D10
D6
D42
D43
D30
B28
D8
D44
D45
D46
D15
D20
D47
D25
D55
D50
D54
D56
D52
B2
D28
D16
D29
D36
B29
D3
16
17
18

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	3.6	3.7	0	0	3.7	3.6	0	3.7	0	0	0	0	0	3.7	0	0	0	0	0.4
PLAY	0	0	3.7	0	0	3.7	3.7	3.7	0	3.7	3.7	0	0	0	3.7	2.7	0	0	0	0
F.F	0	3.6	3.7	0	0	3.3	3.7	0	0	0	0	0	0	0	3.7	2.7	0	0	0	0.5

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	1.6	0	1.8	0	3.7	0	0	0	0	0	0	0	3.1	3.7	2.6	2.3	3.7	1.5	1.9	0
PLAY	1.1	0	1.9	0	0	0	0	0	0	0	0	0	3.1	3.2	2.7	2.7	3.7	3.4	1.9	0
F.F	1.6	0	1.8	0	3.7	0	0	0	0	0	0	0	3.2	3.7	2.5	2.5	3.7	1.5	1.9	0

REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.7	0	0	0	3.7	1.0	3.7	0	0	0	0	3.1	3.1	3.0	3.3	3.4	2.2	1.7	3.7	1.0
PLAY	0	0.8	0	0	0	0.9	0.9	0.3	0.2	2.8	2.8	3.1	3.2	0	3.2	3.5	3.4	0	3.7	0
F.F	3.7	0	0	0	3.7	1.3	3.7	0	0	3.7	3.7	3.1	0.3	3.0	3.3	3.4	3.4	0.2	3.7	1.0

REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	3.7	0	3.4	0	3.4	0	1.2	0	0.3	0	0.9	0	0	0	0	0	1.8	1.8
PLAY	0	0	1.7	0	0	0	3.4	3.4	2.0	0	1.2	0	0	1.2	1.7	1.7	0	0	1.8	1.8
F.F	0	0	2.2	0	3.4	0	3.4	0	0	0	1.0	0	0	0	1.7	1.7	0	0	1.8	1.8

REF. NO.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	1.6	2.0	3.7	0	0	0	1.8	1.8	0	2.0	1.8	3.7	0.1	3.2	3.7	0	3.4	3.3	2.4	0
PLAY	1.8	0	0	0	0	0	1.8	1.8	0	2.0	1.8	3.7	1.6	2.1	3.7	0	3.4	3.3	2.5	3.8
F.F	0	2.0	3.7	0	0	0	1.8	1.8	0	2.0	1.8	3.7	1.5	2.1	3.7	0	3.4	3.3	2.4	0

REF. NO.	IC6001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0	0	0	0	0	3.7	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	0	3.7
PLAY	0	0	0	3.4	3.4	3.7	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	0
F.F	0	0	0	2.0	2.0	3.7	0	0	0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	0

REF. NO.	IC6001																			
MODE	121	122	123	124	125	126	127	128												
STOP	0.1	0	3.7	3.7	3.7	0	0	0												
PLAY	0.2	0	3.7	3.7	3.7	0	0	0												
F.F	0.1	0	3.7	3.7	3.7	0	0	0												

REF. NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0	0	0	0	0	0	1.6	1.6	3.7	0	0	0	1.6						
PLAY	0	0	0	0	0.4	0	0	0.8	0	0	0	0	0	1.6						
F.F	0	0	0	0	0	0.7	0	1.6	1.6	3.7	0	0	0	1.6						

REF. NO.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	3.3	3.0	3.3	3.6	3.4	0	1.4	1.4	0	0	0	0	0	0	0	0	0	0	3.4	3.2
PLAY	3.4	0	3.0	3.6	3.4	0	0.8	1.4	0	0	0	0	0	0	0	0	0	0	3.4	3.2
F.F	3.4	3.0	3.3	0	3.4	0	1.4	1.4	0	0	0	0	0	0	0	0	0	0	3.4	4.2

REF. NO.	IC6004										IC6005									
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8		
STOP	3.2	3.3	0	1.2	3.5						0	6.6	4.9	0	0	3.0	0	0		
PLAY	1.7	0.1	0	0	3.5						0.1	6.7	4.9	0	0	3.0	0	0		
F.F	3.1	3.3	0	1.2	3.5						0	6.5	4.9	0	0	3.0	0.1	0		

REF. NO.	IC6006										IC6007									
MODE	1	2	3	4	5	6	7	8			1	2	3							
STOP	0	0.7	0.6	0	1.7	2.9	0	3.5			0	6.6	3.7							
PLAY	0	0	0	0	1.7	0	3.4	3.5			0	6.7	3.7							
F.F	1.6	0.6	0	0	0	2.9	0	3.5			0	6.5	3.7							

REF. NO.	IC6008										IC6009									
MODE	1	2	3	4	5						1	2	3	4	5					
STOP	0	0	0	3.7	3.7						0	0	0	0	3.3					
PLAY	0	0	0	3.7	3.7						1.7	1.7	0	0.1	3.3					
F.F	0	0	0	3.7	3.7						0	0	0	0	3.3					

REF. NO.	IC6011										IC6012									
MODE	1	2	3	4	5						1	2	3	4	5					
STOP	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3					
PLAY	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3					
F.F	3.3	3.3	0	0	3.3						3.3	3.3	0	0	3.3					

SYSTEM CONTROL & SERVO TRs DC VOLTAGE CHART (SP MODE)

REF. NO.	Q6002			Q6004			Q6005						Q6006			6007		
MODE	E	C	B	E	C	B	1	2	3	4	5	6	E	C	B	E	C	B
STOP	0.1	6.6	0	0	3.5	0	0	2.8	0.1	4.7	0	4.5	6.7	6.6	6.1	0	0	0.6
PLAY	0.1	6.6	0	3.7	1.3	0.2	0	2.7	0.2	4.7	0.1	4.5	6.7	6.6	6.1	0	0	0.6
F.F	0.2	6.4	0.3	0	3.5	0	0	2.7	0.1	4.6	0	4.6	6.5	6.5	5.9	0	0	0.6

REF. NO.	Q6201			Q6300			Q6301											
MODE	E	C	B	E	C	B	E	C	B									
STOP	3.7	3.7	3.1	4.9	0	4.2	3.3	4.1	0									
PLAY	3.7	3.7	3.1	4.9	0	4.2	3.3	4.1	0									
F.F	3.7	3.7	3.1	4.8	0	4.2	3.0	4.8	0									

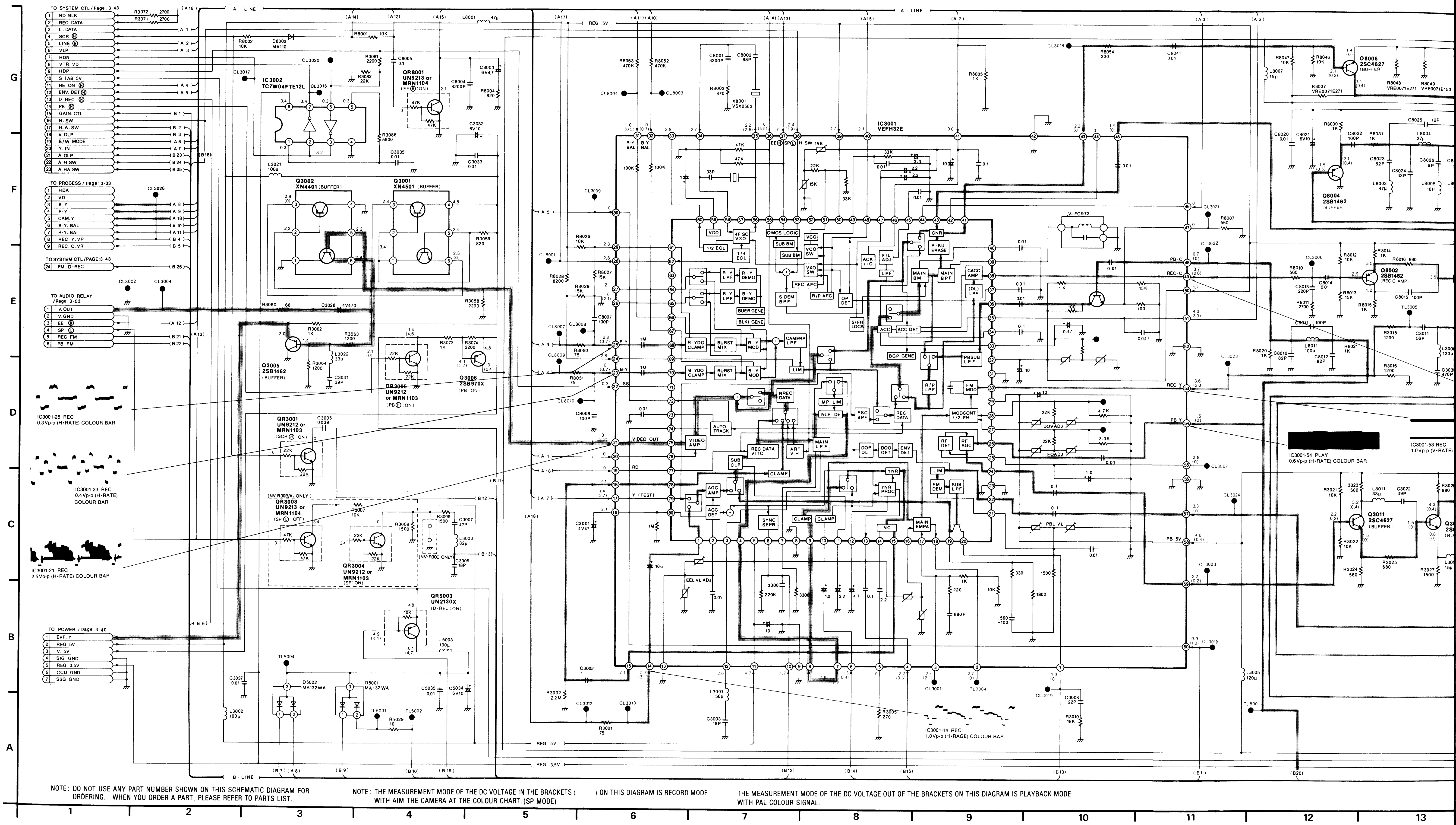
REF. NO.	QR6001			QR6003			QR6004						QR6006			QR6007		
MODE	E	C	B	E	C	B	1	2	3	4	5	6	E	C	B	E	C	B
STOP	4.9	4.9	4.2	3.5	0	3.7	3.7	3.7	3.4	3.5	0	0	0	0	1.3	0	0	3.7
PLAY	4.9	4.9	4.2	3.5	0	3.7	3.7	3.7	3.4	3.5	0	0	0	0	1.3	0	0	3.7
F.F	4.9	4.9	4.2	3.5	0.2	3.3	3.7	3.7	3.4	3.5	0	0	0	0	1.3	0	0	3.7

REF. NO.	QR6008			QR6010						QR6012						QR6014		
MODE	E	C	B	1	2	3	4	5		1	2	3	4	5		E	C	B
STOP	0	3.4	0	0	0	3.0	0.1	0		0	0	0	1.6	1.6		0	0	5.5
PLAY	0	3.5	0	3.1	0	3.0	0.2	0		0	0	0	1.6	1.5		0	0	5.5
F.F	0	3.4	0	3.1	0	3.0	0.1	0		0	0	0	1.6	1.6		0	0	0

REF. NO.	QR6015			QR6016						QR6018								
MODE	E	C	B	1	2	3	4	5		E	C	B						
STOP	0	6.6	0	0	0	0	0	0		0	1.2	0.6						
PLAY	0	5.8	0	0	0	3.7	0	3.4		0	0.2	0.6						
F.F	0	5.2	0	0	0	3.7	0	3.7		0	0	0.6						

REF. NO.	QR6002						QR6005											
MODE	1	2	3	4	5		E	C	B									
STOP	2.8	0	0	0	0		0	2.8	0									
PLAY	2.8	0	0	0.5	0		0	2.8	0									
F.F	2.8	0	0	0	0		0	2.8	0									

3-19. LUMINANCE/CHROMINANCE & HEAD AMP SCHEMATIC DIAGRAM


TO SYSTEM CTL / Page : 3-43
1 RD BLK
2 REC DATA
3 L. DATA
4 SCR Ⓗ
5 LINE Ⓗ
6 VLP
7 HDN
8 VTR. VD
9 HDP
10 S TAB 5V
11 RE ON Ⓗ
12 ENV. DET Ⓗ
13 D REC Ⓗ
14 PB Ⓗ
15 GAIN. CTL
16 H. SW
17 H. A. SW
18 V. OLP
19 B/W MODE
20 Y. IN
21 A OLP
22 A H SW
23 A HA SW
TO PROCESS / Page : 3-33
1 HDA
2 VD
3 B-Y
4 R-Y
5 CAM. Y
6 B-Y. BAL
7 R-Y. BAL
8 REC. Y. VR
9 REC. C. VR
TO SYSTEM CTL / PAGE : 3-43
24 FM D-REC
TO AUDIO RELAY /Page : 3-53
1 V. OUT
2 V. GND
3 EE Ⓛ
4 SP Ⓛ
5 REC FM
6 PB FM
TO POWER / Page : 3-40
1 EVF. Y
2 REG 5V
3 V. 5V
4 SIG GND
5 REG 3.5V
6 CCD GND
7 SSG GND
A - LINE
B - LINE
REG 5V
REG 3.5V
IC3002 TC7W04FTE12L
QR8001 UN9213 or MRN1104 (EE Ⓗ ON)
Q3002 XN4401 (BUFFER)
Q3001 XN4501 (BUFFER)
Q3005 2SB1462 (BUFFER)
QR3005 UN9212 or MRN1103 (PB Ⓗ ON)
Q3006 2SB970X (PB : ON)
QR3001 UN9212 or MRN1103 (SCR Ⓗ ON)
QR3003 UN9213 or MRN1104 (SP Ⓛ OFF)
QR3004 UN9212 or MRN1103 (SP : ON)
(NV-R30E/A. ONLY)
QR5003 UN2130X (D-REC ON)
D5002 MA132WA
D5001 MA132WA
IC3001 VEFH32E
X8001 VSX0563
VLFC973
Q8006 2SC4627 (BUFFER)
Q8004 2SB1462 (BUFFER)
Q8002 2SB1462 (REC-C AMP)
Q3011 2SC4627 (BUFFER)
VDD
1/2 ECL
4f SC VXO
1/4 ECL
C-MOS LOGIC
SUB BM
VCO
VCO SW
VXO SW
REC AFC
R/P AFC
S DEM BPF
OP DET
S/FH LOCK
ACK / IO
FIL ADJ
LPF
CNR
P BU ERASE
MAIN BM
MAIN BPF
CACC AMP
(DL) LPF
R-Y LPF
R-Y DEMO
B-Y LPF
B-Y DEMO
BUER GENE
BLKI GENE
ACC
ACC DET
BGP GENE
PBSUB LPF
R YDO CLAMP
BURST MIX
R-Y MOD
B YDO CLAMP
B-Y MOD
CAMERA LPF
LIM
R/P LPF
FM MOD
NREC DATA
MP LIM
NLE DE
FSC BPF
REC DATA
MODCONT 1/2 FH
AUTO TRACK
VIDEO AMP
REC DATA VITC
ART V.H
MAIN LPF
DOP DL
DOO DET
ENV DET
RF DET
RF AGC
SUB CLP
CLAMP
AGC AMP
AGC DET
SYNC SEPR
YNR
YNR PROC
FM DEM
SUB LPF
MAIN EMPA
NC
EEL VL ADJ
DOVADJ
FOADJ
PBL VL
VIDEO OUT
RD
Y (TEST)
R-Y
B-Y
SS
PB C
REC C
PB Y
REC Y
PB 5V
IC3001-25 REC
0.3Vp-p (H-RATE) COLOUR BAR
IC3001-23 REC
0.4Vp-p (H-RATE)
COLOUR BAR
IC3001-21 REC
2.5Vp-p (H-RATE) COLOUR BAR
IC3001-14 REC
1.0Vp-p (H-RAGE) COLOUR BAR
[redacted]
IC3001-54 PLAY
0.6Vp-p (H-RATE) COLOUR BAR
IC3001-53 REC
1.0Vp-p (V-RATE)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13

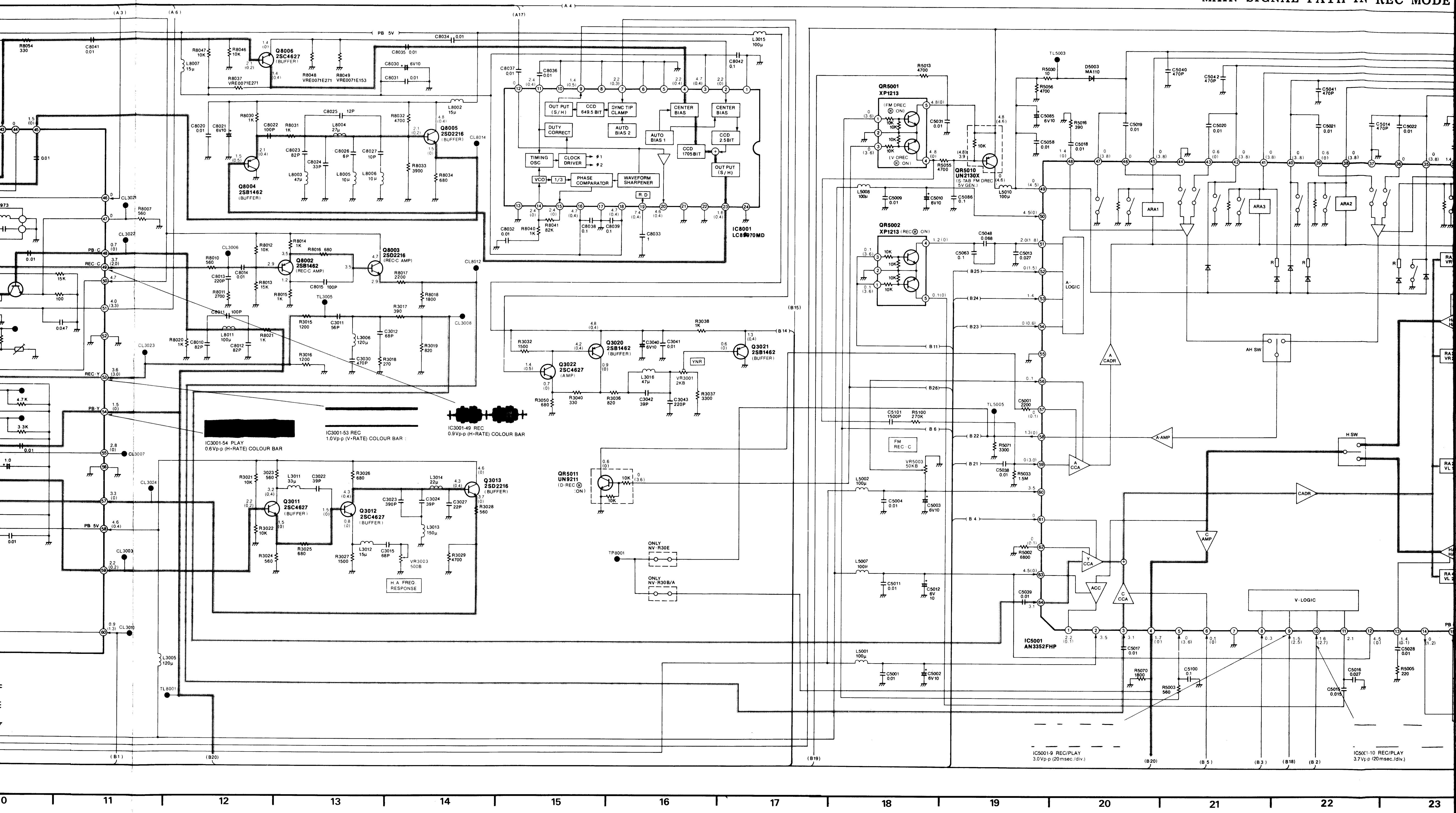
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

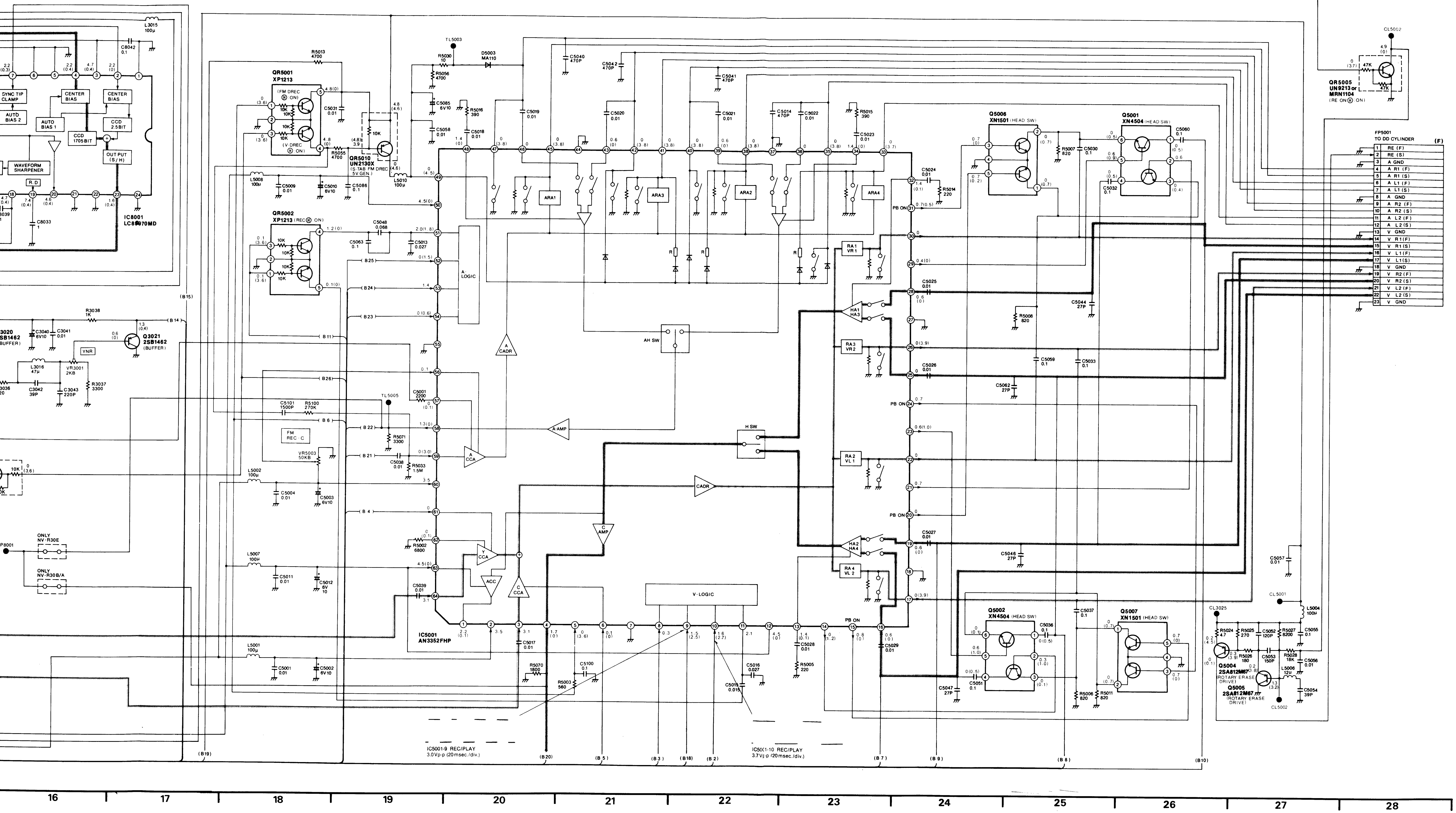
Back Page:
SYSTEM CTL & SERVO Section

MAIN SIGNAL PATH IN REC MODE


PB 5V
Q8006 2SC4627 (BUFFER)
Q8005 2SD2216 (BUFFER)
Q8004 2SB1462 (BUFFER)
Q8003 2SD2216 (REC·C AMP)
Q8002 2SB1462 (REC·C AMP)
IC8001 LC89970MD
OUT PUT (S/H)
CCD 649.5 BIT
SYNC TIP CLAMP
AUTO BIAS 2
CENTER BIAS
AUTO BIAS 1
CCD 1705BIT
CCD 2.5BIT
OUT PUT (S/H)
DUTY CORRECT
TIMING OSC
CLOCK DRIVER
VCO
1/3
PHASE COMPARATOR
WAVEFORM SHARPENER
R.D
Q3020 2SB1462 (BUFFER)
Q3021 2SB1462 (BUFFER)
Q3022 2SC4627 (AMP)
YNR
VR3001 2KB
QR5011 UN9211 (D·REC Ⓡ ON)
TP8001
ONLY NV-R30E
ONLY NV-R30B/A
Q3011 2SC4627 (BUFFER)
Q3012 2SC4627 (BUFFER)
Q3013 2SD2216 (BUFFER)
VR3003 500B
H.A FREQ RESPONSE
IC3001-54 PLAY 0.6Vp-p (H·RATE) COLOUR BAR
IC3001-53 REC 1.0Vp-p (V·RATE) COLOUR BAR
IC3001-49 REC 0.9Vp-p (H·RATE) COLOUR BAR
REC·C
REC·Y
PB·Y
QR5001 XP1213 (FM DREC Ⓡ ON) (V DREC Ⓡ ON)
QR5002 XP1213 (REC Ⓡ ON)
QR5010 UN2130X (S-TAB FM DREC 5V GEN.)
D5003 MA110
FM REC·C
VR5003 50KB
A LOGIC
A CADR
A·AMP
A CCA
Y CCA
ACC
C CCA
C AMP
CADR
ARA1
ARA2
ARA3
AH SW
H SW
V·LOGIC
IC5001 AN3352FHP
IC5001-9 REC/PLAY 3.0Vp-p (20msec./div.)
IC5001-10 REC/PLAY 3.7Vp-p (20msec./div.)
0
11
12
13
14
15
16
17
18
19
20
21
22
23

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE


SYNC TIP CLAMP
AUTO BIAS 2
AUTO BIAS 1
CENTER BIAS
CENTER BIAS
CCD 1705BIT
CCD 2.5BIT
OUT PUT (S/H)
WAVEFORM SHARPENER
R.D
IC8001
LC8●970MD
L3015 100μ
C8042 0.1
C8033 1
QR5001
XP1213
(FM DREC ⓗ ON)
(V-DREC ⓗ ON)
R5013 4700
R5055 4700
C5031 0.01
QR5010
UN2130X
(S TAB FM DREC 5V GEN.)
L5008 100μ
C5009 0.01
C5010 6V10
C5086 0.1
L5010 100μ
QR5002
XP1213 (REC ⓗ ON)
C5048 0.068
C5063 0.1
C5013 0.027
A-LOGIC
TL5003
R5030 10
D5003 MA110
R5056 4700
C5085 6V10
R5016 390
C5058 0.01
C5018 0.01
C5019 0.01
C5040 470P
C5042 470P
C5020 0.01
C5041 470P
C5021 0.01
C5014 470P
C5022 0.01
R5015 390
C5023 0.01
ARA1
ARA3
ARA2
ARA4
AH SW
A CADR
A-AMP
A CCA
Y CCA
ACC
C CCA
C AMP
CADR
H SW
V-LOGIC
IC5001
AN3352FHP
R3038 1K
Q3021
2SB1462 (BUFFER)
YNR
L3016 47μ
VR3001 2KB
R3037 3300
C3042 39P
C3043 220P
C3040 6V10
C3041 0.01
TL5005
C5101 1500P
R5100 270K
C5001 2200
R5071 3300
FM REC·C
VR5003 50KB
C5038 0.01
R5033 1.5M
L5002 100μ
C5004 0.01
C5003 6V10
R5002 6800
L5007 100μ
C5011 0.01
C5012 6V 10
C5039 0.01
L5001 100μ
C5001 0.01
C5002 6V10
C5017 0.01
R5070 1800
C5100 0.1
R5003 560
C5016 0.027
C5015 0.015
C5028 0.01
R5005 220
C5029 0.01
ONLY NV-R30E
ONLY NV-R30B/A
P8001
IC5001-9 REC/PLAY 3.0Vp-p (20msec./div.)
IC5001-10 REC/PLAY 3.7Vp-p (20msec./div.)
C5024 0.01
R5014 220
PB ON
RA1 VR1
HA1 HA3
RA3 VR2
C5025 0.01
C5026 0.01
RA2 VL1
HA2 HA4
RA4 VL2
C5027 0.01
R5008 820
C5044 27P
C5059 0.1
C5033 0.1
C5062 27P
C5046 27P
Q5006
XN1501 (HEAD SW)
R5007 820
C5030 0.1
Q5001
XN4504 (HEAD SW)
C5032 0.1
C5060 0.1
Q5002
XN4504 (HEAD SW)
C5036 0.1
C5051 0.1
C5047 27P
C5037 0.1
Q5007
XN1501 (HEAD SW)
R5006 820
R5011 820
QR5005
UN9213 or MRN1104
(RE ON ⓗ ON)
CL5002
47K
FP5001
TO DD CYLINDER
(F)
1 RE (F)
2 RE (S)
3 A GND
4 A R1 (F)
5 A R1 (S)
6 A L1 (F)
7 A L1 (S)
8 A GND
9 A R2 (F)
10 A R2 (S)
11 A L2 (F)
12 A L2 (S)
13 V GND
14 V R1(F)
15 V R1(S)
16 V L1(F)
17 V L1(S)
18 V GND
19 V R2 (F)
20 V R2 (S)
21 V L2 (F)
22 V L2 (S)
23 V GND
C5057 0.01
CL5001
L5004 100μ
CL3025
R5024 4.7
R5025 270
C5052 120P
R5027 8200
C5055 0.1
R5026 180
C5053 150P
R5028 18K
C5056 0.01
Q5004
2SA812M67
(ROTARY ERASE DRIVE)
Q5005
2SA812M67
(ROTARY ERASE DRIVE)
L5006 12μ
C5054 39P
(B15)
(B14)
(B11)
(B26)
(B6)
(B22)
(B21)
(B4)
(B25)
(B24)
(B23)
(B19)
(B20)
(B5)
(B3)
(B18)
(B2)
(B7)
(B9)
(B8)
(B10)
16
17
18
19
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21
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23
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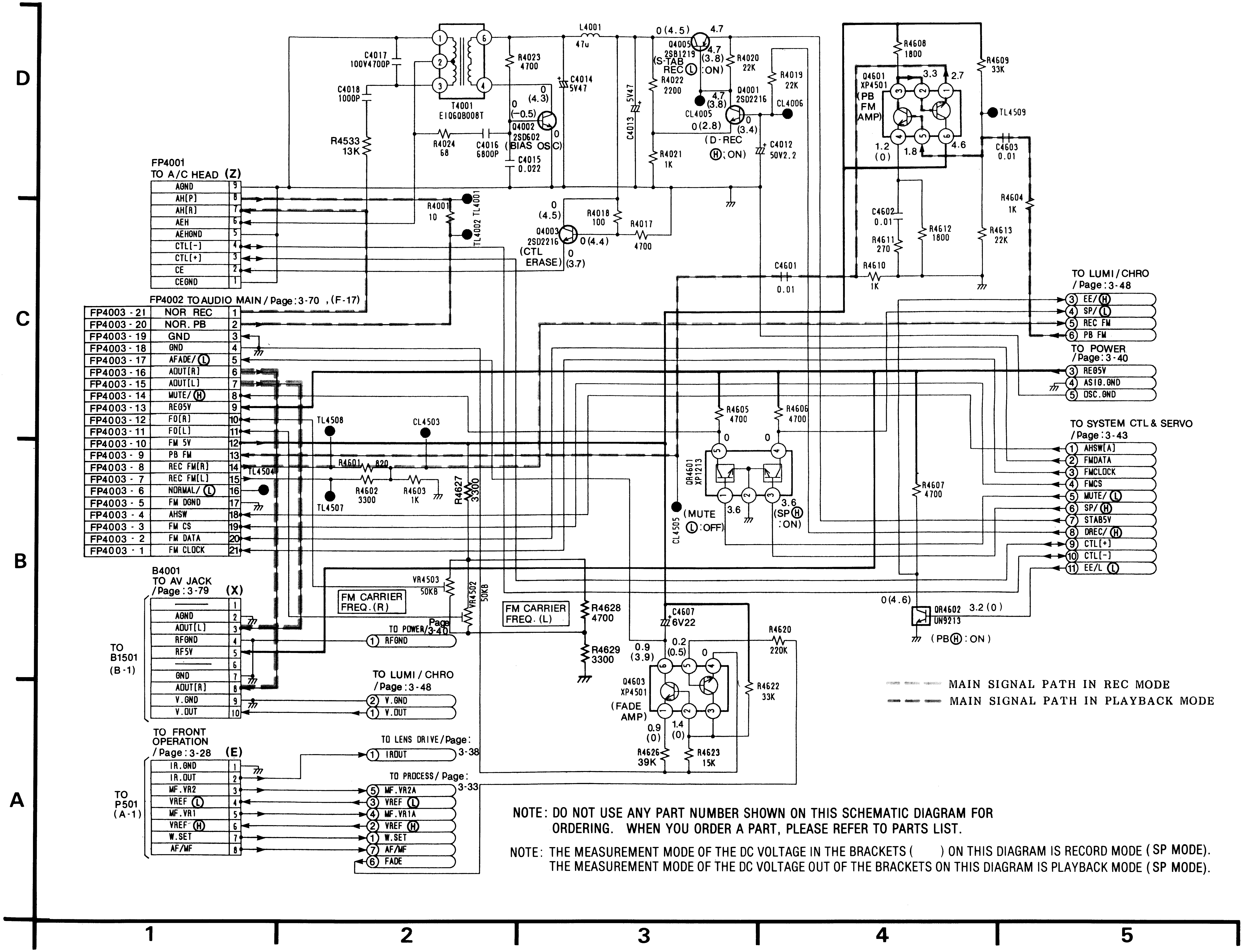
27
28

3-20. AUDIO RELAY SCHEMATIC DIAGRAM

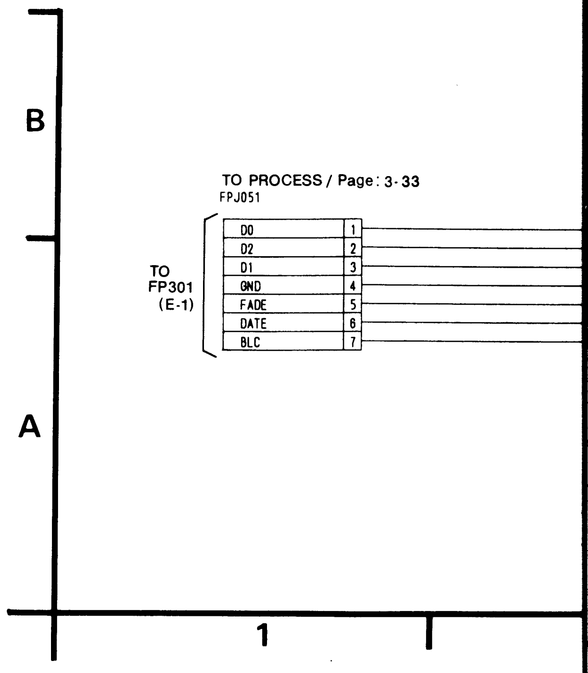


D
C
B
A
1
2
3
4
5
FP4001
TO A/C HEAD (Z)
AGND 9
AH[P] 8
AH[R] 7
AEH 6
AEHGND 5
CTL[-] 4
CTL[+] 3
CE 2
CEGND 1
FP4002 TO AUDIO MAIN / Page : 3-70 , (F-17)
FP4003 - 21 NOR REC 1
FP4003 - 20 NOR. PB 2
FP4003 - 19 GND 3
FP4003 - 18 GND 4
FP4003 - 17 AFADE/Ⓛ 5
FP4003 - 16 AOUT[R] 6
FP4003 - 15 AOUT[L] 7
FP4003 - 14 MUTE/Ⓗ 8
FP4003 - 13 RE05V 9
FP4003 - 12 FO[R] 10
FP4003 - 11 FO[L] 11
FP4003 - 10 FM 5V 12
FP4003 - 9 PB FM 13
FP4003 - 8 REC FM[R] 14
FP4003 - 7 REC FM[L] 15
FP4003 - 6 NORMAL/Ⓛ 16
FP4003 - 5 FM DGND 17
FP4003 - 4 AHSW 18
FP4003 - 3 FM CS 19
FP4003 - 2 FM DATA 20
FP4003 - 1 FM CLOCK 21
B4001
TO AV JACK
/ Page : 3-79 (X)
AGND 2
AOUT[L] 3
RFGND 4
RF5V 5
GND 7
AOUT[R] 8
V.GND 9
V.OUT 10
TO B1501 (B-1)
TO FRONT OPERATION / Page : 3-28 (E)
IR.GND 1
IR.OUT 2
MF.VR2 3
VREF Ⓛ 4
MF.VR1 5
VREF Ⓗ 6
W.SET 7
AF/MF 8
TO P501 (A-1)
C4017 100V4700P
C4018 1000P
R4533 13K
T4001 E1060B008T
R4023 4700
R4024 68
C4016 6800P
C4015 0.022
Q4002 2SD602 (BIAS OSC)
0 (4.3)
0 (-0.5)
0
L4001 47u
C4014 5V47
C4013 5V47
0 (4.5) 4.7
Q4005 2SB1219 (S-TAB REC Ⓛ : ON)
4.7 (3.8)
R4022 2200
R4020 22K
R4019 22K
4.7 (3.8)
Q4001 2SD2216
CL4005
CL4006
0 (2.8)
0 (3.4)
(D-REC Ⓗ ; ON)
C4012 50V2.2
R4021 1K
R4001 10
TL4001
TL4002
0 (4.5)
Q4003 2SD2216 (CTL ERASE)
0 (4.4)
0 (3.7)
R4018 100
R4017 4700
C4601 0.01
R4608 1800
R4609 33K
Q4601 XP4501 (PB FM AMP)
3.3
2.7
1.2 (0)
1.8
4.6
TL4509
C4603 0.01
C4602 0.01
R4611 270
R4612 1800
R4613 22K
R4604 1K
R4610 1K
TO LUMI / CHRO / Page : 3-48
③ EE/Ⓗ
④ SP/Ⓛ
⑤ REC FM
⑥ PB FM
TO POWER / Page : 3-40
③ RE05V
④ AS10.GND
⑤ OSC.GND
TO SYSTEM CTL & SERVO / Page : 3-43
① AHSW[A]
② FMDATA
③ FMCLOCK
④ FMCS
⑤ MUTE/Ⓛ
⑥ SP/Ⓗ
⑦ STAB5V
⑧ DREC/Ⓗ
⑨ CTL[+]
⑩ CTL[-]
⑪ EE/L Ⓛ
R4605 4700
R4606 4700
0
0
QR4601 XP1213
3.6
3.6 (SP Ⓗ : ON)
CL4505 (MUTE Ⓛ : OFF)
TL4508
CL4503
R4601 820
R4602 3300
R4603 1K
TL4507
TL4504
R4627 3300
R4607 4700
0 (4.6)
QR4602 UN9213
3.2 (0)
(PB Ⓗ : ON)
VR4503 50KB
VR4502 50KB
FM CARRIER FREQ. (R)
FM CARRIER FREQ. (L)
R4628 4700
R4629 3300
TO POWER / Page 3-40
① RFGND
TO LUMI / CHRO / Page : 3-48
② V.GND
① V.OUT
C4607 6V22
0.9 (3.9)
0.2 (0.5)
0
Q4603 XP4501 (FADE AMP)
0.9 (0)
1.4 (0)
R4620 220K
R4622 33K
R4626 39K
R4623 15K
TO LENS DRIVE / Page : 3-38
① IROUT
TO PROCESS / Page : 3-33
⑤ MF.VR2A
③ VREF Ⓛ
④ MF.VR1A
② VREF Ⓗ
① W.SET
⑦ AF/MF
⑥ FADE
MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE

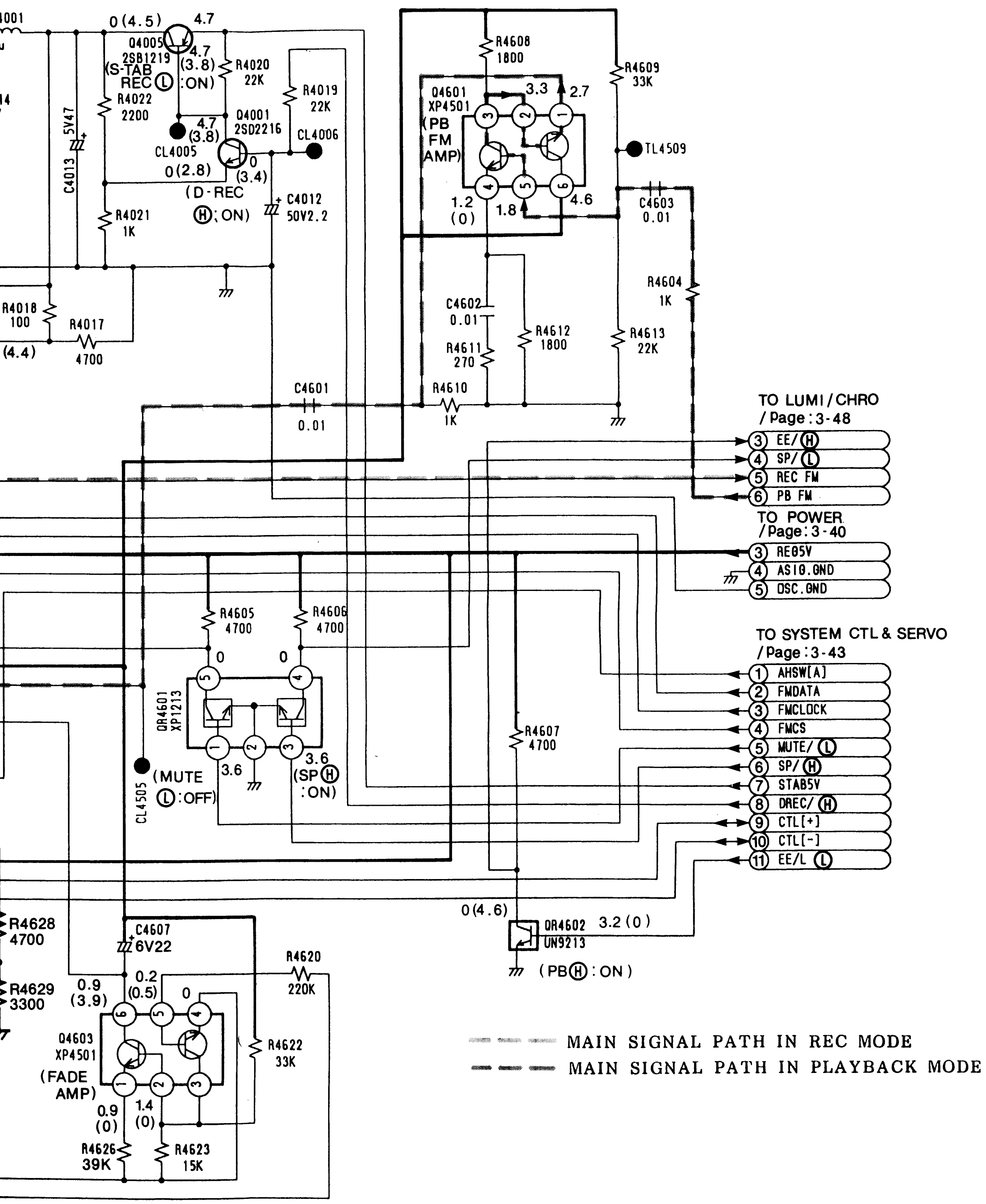
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE (SP MODE).
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE (SP MODE).

3-21. CAMERA OPERATION U
SCHEMATIC DIAGRAM



B
A
1
TO PROCESS / Page : 3-33
FPJ051
TO FP301 (E-1)
D0 1
D2 2
D1 3
GND 4
FADE 5
DATE 6
BLC 7

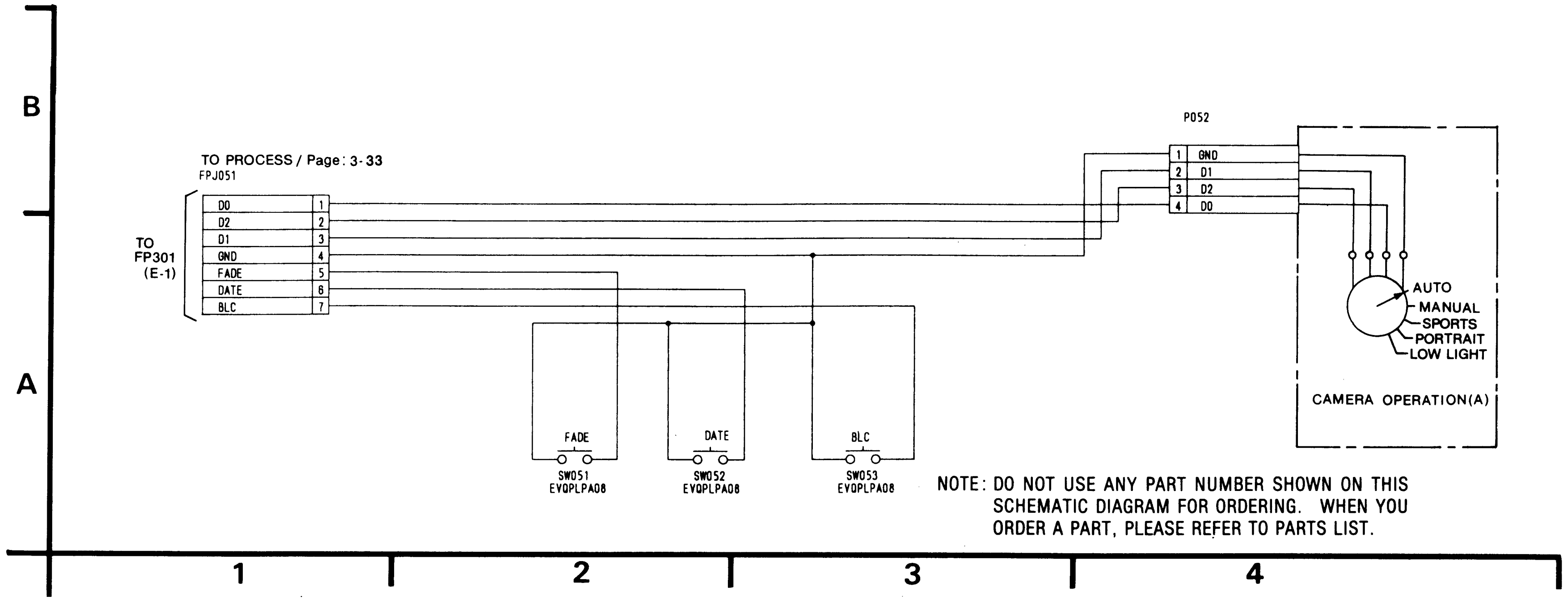

Q4005
2SB1219
(S-TAB
REC Ⓛ:ON)
R4020
22K
R4022
2200
R4019
22K
Q4001
2SD2216
CL4005
CL4006
(D-REC
Ⓗ; ON)
C4013
5V47
C4012
50V2.2
R4021
1K
R4018
100
R4017
4700
C4601
0.01
R4608
1800
Q4601
XP4501
(PB
FM
AMP)
R4609
33K
TL4509
C4603
0.01
R4604
1K
C4602
0.01
R4611
270
R4612
1800
R4613
22K
R4610
1K
TO LUMI/CHRO
/Page:3-48
③ EE/Ⓗ
④ SP/Ⓛ
⑤ REC FM
⑥ PB FM
TO POWER
/Page:3-40
③ RE05V
④ ASI0.GND
⑤ OSC.GND
R4605
4700
R4606
4700
QR4601
XP1213
CL4505
(MUTE
Ⓛ:OFF)
(SPⒽ
:ON)
TO SYSTEM CTL & SERVO
/Page:3-43
① AHSW[A]
② FMDATA
③ FMCLOCK
④ FMCS
⑤ MUTE/Ⓛ
⑥ SP/Ⓗ
⑦ STAB5V
⑧ DREC/Ⓗ
⑨ CTL[+]
⑩ CTL[-]
⑪ EE/L Ⓛ
R4607
4700
QR4602
UN9213
(PBⒽ:ON)
R4628
4700
C4607
6V22
R4620
220K
R4629
3300
Q4603
XP4501
(FADE
AMP)
R4622
33K
R4626
39K
R4623
15K
MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE

)T USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
RING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

EASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE (SP MODE).
EASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE (SP MODE).

3 4 5

3-21. CAMERA OPERATION UNIT SCHEMATIC DIAGRAM


B
A
TO PROCESS / Page: 3-33
FPJ051
TO
FP301
(E-1)
D0 1
D2 2
D1 3
GND 4
FADE 5
DATE 6
BLC 7
P052
1 GND
2 D1
3 D2
4 D0
AUTO
MANUAL
SPORTS
PORTRAIT
LOW LIGHT
CAMERA OPERATION(A)
FADE
SW051
EVQPLPA08
DATE
SW052
EVQPLPA08
BLC
SW053
EVQPLPA08
1
2
3
4

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Next Page:
MAIN C.B.A. Section

MAIN C.B.A.

Integrated Circuit

IC201	E-1
IC203	F-15
IC204	E-15
IC206	E-17
IC207	D-16
IC208	E-16
IC302	D-14
IC303	E-13
IC304	D-5
IC305	F-5
IC306	D-16
IC307	E-14
IC308	F-4
IC309	E-13
IC705	C-2
IC706	C-17
IC707	C-16
IC708	C-1
IC1001	B-12
IC3001	B-5
IC3002	B-13
IC5001	B-3
IC6001	D-10
IC6002	E-7
IC6003	D-11
IC6004	E-6
IC6005	E-12
IC6006	E-12
IC6007	C-10
IC6008	C-8
IC6009	D-7
IC6011	F-6
IC6012	E-6
IC8001	C-13

Transistor

Q204	F-3
Q206	F-3
Q207	F-3
Q208	E-3
Q209	E-16
Q210	F-17
Q211	F-17
Q301	D-6
Q302	D-4
Q701	D-2
Q702	C-2
Q703	D-3
Q704	C-17
Q705	C-17
Q706	D-2
Q707	C-2
Q708	D-2
Q709	B-2
Q1001	C-10
Q1002	C-12
Q1003	A-10
Q1004	A-11
Q1005	C-12
Q1062	B-10
Q3001	D-14
Q3002	C-14
Q3005	C-4
Q3006	C-12
Q3011	B-14
Q3012	B-4
Q3013	C-4
Q3020	C-5
Q3021	C-5
Q3022	D-5
Q4001	B-16
Q4002	B-17
Q4003	C-16
Q4005	B-16
Q4601	A-2
Q4603	B-2
Q5001	A-3
Q5002	A-3
Q5004	A-4
Q5005	B-4
Q5006	A-4
Q5007	A-2
Q6002	E-7
Q6004	D-7
Q6005	D-7
Q6006	C-9
Q6201	E-8
Q6300	E-6
Q6301	E-7
Q8002	C-3
Q6003	C-3
Q8004	C-6
Q8005	D-5
Q8006	D-12

Transistor & Resistor

QR301	F-4
QR701	D-3
QR1002	C-11
QR1006	B-9
QR1061	C-10
QR3001	B-14
QR3003	B-13
QR3004	B-14
QR3005	D-13
QR4601	B-17
QR4602	A-16
QR5001	B-16
QR5002	B-15
QR5003	B-16
QR5005	B-4
QR5010	B-15
QR5011	C-3
QR6001	C-11
QR6002	D-7
QR6003	E-7
QR6004	F-6
QR6005	D-7
QR6007	B-10
QR6008	E-8
QR6010	E-7
QR6012	E-8
QR6014	C-11
QR6015	C-8
QR6016	E-8
QR6018	E-12
QR8001	C-5

Diode

D203	D-2
D206	D-15
D207	E-16
D208	E-17
D209	F-16
D301	F-5
D303	E-4
D304	E-15
D305	E-4
D306	F-14
D703	D-1
D1002	B-10
D1004	B-10
D1005	B-11
D1006	B-11
D1007	B-11
D1008	C-12
D1012	A-12
D1015	B-10
D1062	B-11
D1064	B-11
D5001	A-16
D5002	B-16
D5003	B-15
D6008	F-7
D6011	D-6
D6012	D-6
D6013	C-10
D6015	C-7
D6016	C-10
D6018	E-6
D6300	E-7
D6301	E-7
D6303	F-7
D8002	B-13

Transfomer

T1001	B-7
T1002	B-8
T4001	C-1

Test Point

CL201	E-15
CL202	D-15
CL203	D-15
CL204	F-15
CL205	D-17
CL301	F-13
CL302	F-14
CL303	D-15
CL304	E-16
CL305	E-16
CL307	D-13
CL308	D-14
CL309	D-13
CL310	F-14
CL311	E-15
CL312	E-13
CL313	E-13
CL314	D-13
CL315	D-13
CL316	D-15
CL317	D-14
CL318	D-15
CL319	E-13
CL320	E-13
CL321	E-13
CL322	E-13
CL701	C-16
CL702	C-16
CL703	D-15
CL705	D-16
CL1001	C-12
CL1002	C-11
CL1003	C-12
CL1004	C-12
CL1005	C-12
CL1006	C-11
CL1007	C-10
CL1008	A-10
CL1009	A-10
CL1010	B-10
CL1011	C-12
CL1013	C-11
CL1014	C-11
CL3001	B-14
CL3002	A-17
CL3003	B-14
CL3004	A-17
CL3006	B-14
CL3007	B-14
CL3008	C-15
CL3009	B-13
CL3010	B-14
CL3012	A-13
CL3013	A-13
CL3016	B-12
CL3017	B-13
CL3018	D-14
CL3019	B-14
CL3020	B-13
CL3021	B-14
CL3022	C-15
CL3023	B-14
CL3024	B-14
CL3025	A-14
CL3026	D-14
CL4005	B-16
CL4006	B-16
CL4503	B-17
CL4505	A-17
CL5001	B-14
CL5002	B-14
CL6001	E-11
CL6002	E-10
CL6005	E-10
CL6006	C-10
CL6007	E-12
CL6008	C-12
CL6009	C-10
CL6010	F-12
CL6204	B-16
CL6206	D-10
CL6207	D-10
CL6208	D-10
CL6209	D-10
CL6210	D-10
CL6211	E-9
CL6212	E-10
CL6213	E-11
CL6214	D-12
CL6215	E-11
CL6216	E-11
CL6217	E-11
CL8001	A-13
CL8003	C-13
CL8004	C-13
CL8007	C-13
CL8008	B-13
CL8009	B-13
CL8010	B-13
CL8012	C-15
CL8014	C-14
TL201	D-17
TL301	D-15
TL701	D-15
TL1001	C-10
TL3004	B-13
TL3005	B-14
TL4001	B-17
TL4002	B-17
TL4504	A-17
TL4507	B-17
TL4508	A-17
TL4509	A-17
TL5001	A-16
TL5002	A-16
TL5003	C-15
TL5004	B-16
TL5005	A-17
TL8001	C-15
TP8001	F-1

Adjustment

C201	D-17
VR3001	D-13
VR3003	C-14
VR4502	A-17
VR4503	A-16
VR5003	A-16

Thermistor

TH701	C-2

Connector

B201	F-2
B302	E-15
B1001	C-9
B4001	A-1
B6004	E-12
FP301	F-14
FP701	D-17
FP4001	C-17
FP4002	B-1
FP5001	A-14
FP6001	E-10
FP6002	E-11
FP6005	E-9
FP6006	F-12
P303	F-14
P4003	B-17

Crystal Oscillator

X201	D-1
X301	F-13
X6001	E-7
X6002	E-7
X8001	C-6

Filter

FL201	F-3

Coil

L203	D-2
L204	E-2
L206	E-16
L207	F-3
L209	F-16
L210	E-3
L211	E-3
L212	F-16
L215	F-16
L220	D-2
L221	E-17
L222	E-16
L230	F-17
L231	F-16
L301	D-4
L302	D-3
L303	D-3
L304	D-15
L305	E-15
L308	D-14
L309	D-14
L310	D-2
L311	E-6
L312	E-6
L313	D-13
L314	D-4
L315	D-4
L316	F-4
L317	E-13
L318	D-3
L319	F-4
L321	D-2
L325	E-5
L701	D-3
L703	D-3
L706	C-16
L707	C-3
L1001	B-8
L1002	B-7
L1003	C-6
L1006	B-11
L1007	A-8
L1008	A-6
L1009	B-11
L1010	B-11
L1011	A-11
L1012	B-11
L1014	B-11
L1015	B-11
L1062	C-8
L3001	B-13
L3002	B-13
L3003	B-14
L3005	B-15
L3006	C-15
L3011	B-14
L3012	C-14
L3013	C-5
L3014	B-4
L3015	C-6
L3016	C-14
L3021	C-15
L3022	D-4
L4001	B-17
L5001	B-16
L5002	B-16
L5003	B-16
L5004	A-14
L5006	B-4
L5007	B-15
L5008	B-15
L5010	C-3
L6001	D-11
L6002	D-12
L8001	C-13
L8002	C-6
L8003	D-6
L8004	D-6
L8005	C-5
L8006	C-5
L8007	C-12
L8011	C-15

Capacitor

C201	D-17
C202	D-17
C203	D-17
C205	E-17
C207	D-2
C210	E-17
C211	E-17
C212	F-1
C213	E-17
C215	E-16
C216	E-16
C225	E-16
C233	E-2
C234	E-16
C236	F-3
C237	F-15
C238	F-15
C239	F-3
C240	F-15
C241	E-16
C242	E-16
C243	E-16
C244	E-16
C245	F-3
C246	E-16
C247	D-16
C249	E-3
C250	E-3
C251	D-15
C252	E-3
C253	E-3
C254	E-3
C255	E-3
C256	E-3
C257	E-16
C258	E-3
C262	D-16
C265	E-17
C266	E-17
C267	F-16
C269	F-16
C270	F-17
C271	E-2
C272	F-17
C273	F-17
C274	F-16
C275	F-16
C276	F-17
C280	F-16
C301	D-4
C302	D-15
C303	D-14
C304	D-15
C305	D-14
C307	E-4
C308	E-4
C310	E-14
C312	E-5
C313	E-6
C314	E-5
C315	D-5
C316	D-5
C317	D-13
C318	D-5
C319	D-5
C320	D-13
C322	D-13
C323	D-4
C324	F-5
C326	D-5
C329	F-5
C330	F-5
C331	F-4
C332	F-14
C333	F-4
C334	D-2
C335	D-2
C338	F-5
C343	F-4
C344	F-4
C345	F-4
C346	E-14
C347	E-14
C348	E-16
C350	E-16
C351	D-2
C352	F-2
C353	F-4
C360	E-16
C361	E-14
C370	E-5
C701	C-2
C702	C-2
C703	D-3
C710	D-2
C711	D-3
C716	D-3
C719	C-17
C720	C-16
C721	C-16
C722	C-16
C724	D-16
C725	D-16
C729	C-2
C730	C-16
C731	D-16
C732	C-2
C737	C-1
C738	B-2
C739	B-2
C779	C-2
C1001	B-10
C1002	B-7
C1003	B-7
C1004	B-12
C1005	B-12
C1006	B-12
C1007	B-8
C1008	A-7
C1009	A-11
C1010	A-12
C1011	A-12
C1012	A-11
C1013	B-7
C1014	B-11
C1015	C-7
C1017	B-11
C1019	B-11
C1020	B-11
C1022	A-11
C1024	B-12
C1025	B-12
C1026	B-6
C1027	B-6
C1028	B-6
C1029	B-12
C1030	B-12
C1031	B-12
C1032	B-12
C1033	B-12
C1034	B-12
C1035	A-11
C1036	A-12
C1037	A-12
C1040	B-10
C1041	B-10
C1042	C-11
C1043	B-12
C1051	B-12
C1056	C-7
C1057	C-11
C1058	C-11
C1063	B-7
C1064	C-7
C1066	C-7
C3001	A-6
C3002	A-13
C3003	B-13
C3005	B-14
C3006	B-14
C3007	A-14
C3008	B-14
C3011	C-15
C3012	C-15
C3015	B-14
C3022	B-14
C3023	B-4
C3024	B-4
C3027	B-4
C3028	C-4
C3030	C-15
C3031	D-4
C3032	C-4
C3033	C-4
C3035	B-13
C3037	B-13
C3040	C-6
C3041	C-6
C3042	D-14
C3043	D-14
C4012	B-2
C4013	B-2
C4014	B-1
C4015	B-17
C4016	C-1
C4017	C-1
C4018	C-17
C4601	A-1
C4602	A-2
C4603	A-1
C4607	A-2
C5001	B-2
C5002	B-16
C5003	C-16
C5004	C-16
C5009	C-3
C5010	B-3
C5011	B-2
C5012	C-15
C5013	C-15
C5014	B-4
C5015	B-15
C5016	B-15
C5017	C-2
C5018	B-3
C5019	B-3
C5020	B-15
C5021	B-3
C5022	B-3
C5023	B-3
C5024	B-3
C5025	B-3
C5026	B-3
C5027	A-3
C5028	B-2
C5029	B-2
C5030	B-4
C5031	A-16
C5032	A-3
C5033	A-3
C5034	B-16
C5035	A-16
C5036	A-3
C5037	B-2
C5038	C-16
C5039	C-2
C5040	B-15
C5041	B-15
C5042	B-15
C5044	B-3
C5046	A-3
C5047	B-3
C5048	C-15
C5051	B-3
C5052	A-4
C5053	A-4
C5054	B-4
C5055	A-4
C5056	B-4
C5058	C-3
C5059	A-3
C5060	B-4
C5062	B-16
C5063	B-15
C5085	B-4
C5086	C-15
C5100	B-2
C5101	B-15
C6001	E-11
C6002	E-11
C6003	E-11
C6004	F-12
C6005	E-7
C6006	E-7
C6007	E-7
C6008	D-8
C6011	E-8
C6012	E-7
C6013	E-8
C6014	C-10
C6015	D-12
C6017	D-12
C6018	D-12
C6022	D-6
C6023	E-6
C6024	E-10
C6025	C-10
C6027	D-7
C6030	E-11
C6031	D-7
C6038	E-11
C6040	D-12
C6041	D-7
C6042	D-7
C6060	E-11
C6062	E-12
C6100	D-6
C6201	E-8
C6203	D-8
C6204	D-9
C6205	D-9
C6206	E-9
C6207	D-9
C6208	D-8
C6209	D-8
C6210	C-10
C6211	D-10
C6213	C-8
C6214	D-10
C6221	D-8
C6230	D-8
C6231	E-9
C8001	C-5
C8002	C-5
C8003	C-5
C8004	C-5
C8005	C-5
C8007	B-13
C8008	B-13
C8010	C-15
C8011	C-15
C8012	C-15
C8013	C-3
C8014	C-3
C8015	C-3
C8020	C-6
C8021	C-6
C8022	C-6
C8023	C-6
C8024	C-6
C8025	C-6
C8026	C-5
C8027	C-5
C8030	B-12
C8031	C-12
C8032	C-13
C8033	C-13
C8034	C-12
C8035	D-13
C8036	B-13
C8037	B-6
C8038	C-13
C8039	C-13
C8041	C-14
C8042	B-13

Resistor

R201	D-17
R202	D-17
R203	E-17
R205	F-1
R207	E-17
R212	E-17
R214	E-17
R215	E-2
R216	E-17
R217	E-17
R218	F-17
R223	E-17
R224	E-2
R225	F-2
R233	F-3
R236	F-3
R237	F-3
R238	F-3
R239	F-15
R241	F-3
R242	E-3
R243	F-3
R244	F-3
R245	E-3
R246	E-3
R247	E-3
R249	E-3
R250	E-3
R251	E-3
R252	E-3
R253	D-16
R255	E-3
R256	F-3
R257	F-15
R258	E-3
R260	E-3
R263	E-17
R264	D-2
R265	F-2
R266	F-2
R268	D-17
R269	E-17
R270	E-17
R271	E-17
R272	E-16
R273	E-17
R274	F-2
R275	F-16
R284	F-17
R285	F-17
R286	F-17
R287	F-17
R288	F-17
R289	F-17
R290	F-17
R291	F-17
R292	F-16
R293	F-17
R294	F-16
R295	D-2
R296	E-17
R297	E-17
R298	E-15
R299	E-15
R301	D-4
R302	E-4
R303	D-4
R304	E-5
R305	D-13
R307	E-6
R310	D-13
R311	D-5
R312	D-5
R313	D-5
R314	D-5
R315	D-13
R316	D-6
R317	D-5
R318	D-6
R319	D-6
R320	D-6
R321	D-13
R322	D-13
R323	F-5
R326	D-4
R327	D-5
R328	D-5
R329	E-13
R330	F-13
R331	E-13
R332	E-13
R333	F-4
R334	E-4
R335	E-4
R336	D-4
R337	F-4
R338	F-4
R339	F-14
R340	F-4
R342	E-14
R343	F-6
R344	F-5
R345	F-5
R348	F-5
R349	F-5
R350	F-6
R351	F-5
R352	F-5
R353	F-6
R354	E-12
R355	D-3
R356	E-2
R357	E-16
R358	D-16
R359	D-2
R360	E-4
R361	D-4
R364	F-5
R370	F-5
R371	D-13
R374	F-5
R375	F-6
R376	F-6
R377	F-5
R378	F-12
R379	F-13
R380	F-13
R381	F-5
R382	F-4
R383	F-14
R385	E-4
R387	D-4
R388	D-4
R389	E-14
R391	F-5
R392	F-5
R701	C-1
R702	C-2
R703	D-2
R704	D-2
R705	C-2
R708	C-2
R709	D-2
R710	C-2
R711	C-2
R712	C-2
R713	C-2
R714	D-2
R715	D-3
R716	C-17
R717	C-17
R718	C-17
R720	C-16
R721	C-16
R722	C-16
R723	C-1
R724	C-1
R725	C-1
R726	D-1
R727	D-1
R728	D-1
R729	D-1
R730	D-1
R731	D-1
R732	D-1
R733	D-1
R734	D-1
R735	D-1
R736	D-1
R737	D-1
R738	D-1
R739	D-1
R740	D-1
R741	D-1
R742	D-1
R743	D-1
R744	D-1
R745	D-1
R746	D-1
R747	D-1
R748	D-1
R749	C-1
R750	C-1
R751	D-3
R752	D-3
R753	C-3
R754	D-2
R755	C-2
R756	D-3
R757	C-1
R758	C-1
R759	D-2
R760	D-1
R761	C-1
R764	C-1
R765	B-2
R767	B-1
R1001	B-1
R1002	B-1
R1003	C-1
R1004	C-1
R1005	A-1
R1006	A-1
R1007	A-1
R1008	B-1
R1009	B-1
R1010	C-1
R1012	B-1
R1013	B-1
R1014	B-1
R1015	A-1
R1016	A-1
R1017	B-1
R1018	B-1
R1019	B-1
R1020	B-1
R1021	B-1
R1022	A-1
R1023	A-1
R1024	A-1
R1025	A-1
R1026	C-1
R1027	C-1
R1033	B-1
R1035	B-1
R1038	B-1
R1039	A-1
R1040	B-1
R1051	B-1
R1052	B-1
R1062	C-7
R1063	C-1
R1065	B-1
R1071	B-1
R1072	B-1
R1073	B-1
R1090	C-6

ADDRESS INFORMATION

MAIN C.B.A.

X6001	E-7
X6002	E-7
X8001	C-6

Filter

FL201	F-3

Coil

L203	D-2
L204	E-2
L206	E-16
L207	F-3
L209	F-16
L210	E-3
L211	E-3
L212	F-16
L215	F-16
L220	D-2
L221	E-17
L222	E-16
L230	F-17
L231	F-16
L301	D-4
L302	D-3
L303	D-3
L304	D-15
L305	E-15
L308	D-14
L309	D-14
L310	D-2
L311	E-6
L312	E-6
L313	D-13
L314	D-4
L315	D-4
L316	F-4
L317	E-13
L318	D-3
L319	F-4
L321	D-2
L325	E-5
L701	D-3
L703	D-3
L706	C-16
L707	C-3
L1001	B-8
L1002	B-7
L1003	C-6
L1006	B-11
L1007	A-8
L1008	A-6
L1009	B-11
L1010	B-11
L1011	A-11
L1012	B-11
L1014	B-11
L1015	B-11
L1062	C-8
L3001	B-13
L3002	B-13
L3003	B-14
L3005	B-15
L3006	C-15
L3011	B-14
L3012	C-14
L3013	C-5
L3014	B-4
L3015	C-6
L3016	C-14
L3021	C-15
L3022	D-4
L4001	B-17
L5001	B-16
L5002	B-16
L5003	B-16
L5004	A-14
L5006	B-4
L5007	B-15
L5008	B-15
L5010	C-3
L6001	D-11
L6002	D-12
L8001	C-13
L8002	C-6
L8003	D-6
L8004	D-6
L8005	C-5
L8006	C-5
L8007	C-12
L8011	C-15

Capacitor

C201	D-17
C202	D-17
C203	D-17
C205	E-17
C207	D-2
C210	E-17
C211	E-17
C212	F-1
C213	E-17
C215	E-16
C216	E-16
C225	E-16
C233	E-2
C234	E-16
C236	F-3
C237	F-15
C238	F-15
C239	F-3
C240	F-15
C241	E-16
C242	E-16
C243	E-16
C244	E-16
C245	F-3
C246	E-16
C247	D-16
C249	E-3
C250	E-3
C251	D-15
C252	E-3
C253	E-3
C254	E-3
C255	E-3
C256	E-3
C257	E-16
C258	E-3
C262	D-16
C265	E-17
C266	E-17
C267	F-16
C269	F-16
C270	F-17
C271	E-2
C272	F-17
C273	F-17
C274	F-16
C275	F-16
C276	F-17
C280	F-16
C301	D-4
C302	D-15
C303	D-14
C304	D-15
C305	D-14
C307	E-4
C308	E-4
C310	E-14
C312	E-5
C313	E-6
C314	E-5
C315	D-5
C316	D-5
C317	D-13
C318	D-5
C319	D-5
C320	D-13
C322	D-13
C323	D-4
C324	F-5
C326	D-5
C329	F-5
C330	F-5
C331	F-4
C332	F-14
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C334	D-2
C335	D-2
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C344	F-4
C345	F-4
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C347	E-14
C348	E-16
C350	E-16
C351	D-2
C352	F-2
C353	F-4
C360	E-16
C361	E-14
C370	E-5
C701	C-2
C702	C-2
C703	D-3
C710	D-2
C711	D-3
C716	D-3
C719	C-17
C720	C-16
C721	C-16
C722	C-16
C724	D-16
C725	D-16
C729	C-2
C730	C-16
C731	D-16
C732	C-2
C737	C-1
C738	B-2
C739	B-2
C779	C-2
C1001	B-10
C1002	B-7
C1003	B-7
C1004	B-12
C1005	B-12
C1006	B-12
C1007	B-8
C1008	A-7
C1009	A-11
C1010	A-12
C1011	A-12
C1012	A-11
C1013	B-7
C1014	B-11
C1015	C-7
C1017	B-11
C1019	B-11
C1020	B-11
C1022	A-11
C1024	B-12
C1025	B-12
C1026	B-6
C1027	B-6
C1028	B-6
C1029	B-12
C1030	B-12
C1031	B-12
C1032	B-12
C1033	B-12
C1034	B-12
C1035	A-11
C1036	A-12
C1037	A-12
C1040	B-10
C1041	B-10
C1042	C-11
C1043	B-12
C1051	B-12
C1056	C-7
C1057	C-11
C1058	C-11
C1063	B-7
C1064	C-7
C1066	C-7
C3001	A-6
C3002	A-13
C3003	B-13
C3005	B-14
C3006	B-14
C3007	A-14
C3008	B-14
C3011	C-15
C3012	C-15
C3015	B-14
C3022	B-14
C3023	B-4
C3024	B-4
C3027	B-4
C3028	C-4
C3030	C-15
C3031	D-4
C3032	C-4
C3033	C-4
C3035	B-13
C3037	B-13
C3040	C-6
C3041	C-6
C3042	D-14
C3043	D-14
C4012	B-2
C4013	B-2
C4014	B-1
C4015	B-17
C4016	C-1
C4017	C-1
C4018	C-17
C4601	A-1
C4602	A-2
C4603	A-1
C4607	A-2
C5001	B-2
C5002	B-16
C5003	C-16
C5004	C-16
C5009	C-3
C5010	B-3
C5011	B-2
C5012	C-15
C5013	C-15
C5014	B-4
C5015	B-15
C5016	B-15
C5017	C-2
C5018	B-3
C5019	B-3
C5020	B-15
C5021	B-3
C5022	B-3
C5023	B-3
C5024	B-3
C5025	B-3
C5026	B-3
C5027	A-3
C5028	B-2
C5029	B-2
C5030	B-4
C5031	A-16
C5032	A-3
C5033	A-3
C5034	B-16
C5035	A-16
C5036	A-3
C5037	B-2
C5038	C-16
C5039	C-2
C5040	B-15
C5041	B-15
C5042	B-15
C5044	B-3
C5046	A-3
C5047	B-3
C5048	C-15
C5051	B-3
C5052	A-4
C5053	A-4
C5054	B-4
C5055	A-4
C5056	B-4
C5058	C-3
C5059	A-3
C5060	B-4
C5062	B-16
C5063	B-15
C5085	B-4
C5086	C-15
C5100	B-2
C5101	B-15
C6001	E-11
C6002	E-11
C6003	E-11
C6004	F-12
C6005	E-7
C6006	E-7
C6007	E-7
C6008	D-8
C6011	E-8
C6012	E-7
C6013	E-8
C6014	C-10
C6015	D-12
C6017	D-12
C6018	D-12
C6022	D-6
C6023	E-6
C6024	E-10
C6025	C-10
C6027	D-7
C6030	E-11
C6031	D-7
C6038	E-11
C6040	D-12
C6041	D-7
C6042	D-7
C6060	E-11
C6062	E-12
C6100	D-6
C6201	E-8
C6203	D-8
C6204	D-9
C6205	D-9
C6206	E-9
C6207	D-9
C6208	D-8
C6209	D-8
C6210	C-10
C6211	D-10
C6213	C-8
C6214	D-10
C6221	D-8
C6230	D-8
C6231	E-9
C8001	C-5
C8002	C-5
C8003	C-5
C8004	C-5
C8005	C-5
C8007	B-13
C8008	B-13
C8010	C-15
C8011	C-15
C8012	C-15
C8013	C-3
C8014	C-3
C8015	C-3
C8020	C-6
C8021	C-6
C8022	C-6
C8023	C-6
C8024	C-6
C8025	C-6
C8026	C-5
C8027	C-5
C8030	B-12
C8031	C-12
C8032	C-13
C8033	C-13
C8034	C-12
C8035	D-13
C8036	B-13
C8037	B-6
C8038	C-13
C8039	C-13
C8041	C-14
C8042	B-13

Resistor

R201	D-17
R202	D-17
R203	E-17
R205	F-1
R207	E-17
R212	E-17
R214	E-17
R215	E-2
R216	E-17
R217	E-17
R218	F-17
R223	E-17
R224	E-2
R225	F-2
R233	F-3
R236	F-3
R237	F-3
R238	F-3
R239	F-15
R241	F-3
R242	E-3
R243	F-3
R244	F-3
R245	E-3
R246	E-3
R247	E-3
R249	E-3
R250	E-3
R251	E-3
R252	E-3
R253	D-16
R255	E-3
R256	F-3
R257	F-15
R258	E-3
R260	E-3
R263	E-17
R264	D-2
R265	F-2
R266	F-2
R268	D-17
R269	E-17
R270	E-17
R271	E-17
R272	E-16
R273	E-17
R274	F-2
R275	F-16
R284	F-17
R285	F-17
R286	F-17
R287	F-17
R288	F-17
R289	F-17
R290	F-17
R291	F-17
R292	F-16
R293	F-17
R294	F-16
R295	D-2
R296	E-17
R297	E-17
R298	E-15
R299	E-15
R301	D-4
R302	E-4
R303	D-4
R304	E-5
R305	D-13
R307	E-6
R310	D-13
R311	D-5
R312	D-5
R313	D-5
R314	D-5
R315	D-13
R316	D-6
R317	D-5
R318	D-6
R319	D-6
R320	D-6
R321	D-13
R322	D-13
R323	F-5
R326	D-4
R327	D-5
R328	D-5
R329	E-13
R330	F-13
R331	E-13
R332	E-13
R333	F-4
R334	E-4
R335	E-4
R336	D-4
R337	F-4
R338	F-4
R339	F-14
R340	F-4
R342	E-14
R343	F-6
R344	F-5
R345	F-5
R348	F-5
R349	F-5
R350	F-6
R351	F-5
R352	F-5
R353	F-6
R354	E-12
R355	D-3
R356	E-2
R357	E-16
R358	D-16
R359	D-2
R360	E-4
R361	D-4
R364	F-5
R370	F-5
R371	D-13
R374	F-5
R375	F-6
R376	F-6
R377	F-5
R378	F-12
R379	F-13
R380	F-13
R381	F-5
R382	F-4
R383	F-14
R385	E-4
R387	D-4
R388	D-4
R389	E-14
R391	F-5
R392	F-5
R701	C-1
R702	C-2
R703	D-2
R704	D-2
R705	C-2
R708	C-2
R709	D-2
R710	C-2
R711	C-2
R712	C-2
R713	C-2
R714	D-2
R715	D-3
R716	C-17
R717	C-17
R718	C-17
R720	C-16
R721	C-16
R722	C-16
R723	C-16
R724	C-17
R725	C-17
R726	D-17
R727	D-17
R728	D-17
R729	D-17
R730	D-17
R731	D-17
R732	D-17
R733	D-17
R734	D-16
R735	D-16
R736	D-16
R737	D-16
R738	D-17
R739	D-17
R740	D-16
R741	D-16
R742	D-16
R743	D-16
R744	D-16
R745	D-16
R746	D-16
R747	D-16
R748	D-16
R749	C-16
R750	C-16
R751	D-3
R752	D-3
R753	C-3
R754	D-2
R755	C-2
R756	D-3
R757	C-16
R758	C-16
R759	D-2
R760	D-1
R761	C-16
R764	C-1
R765	B-2
R767	B-17
R1001	B-12
R1002	B-11
R1003	C-12
R1004	C-12
R1005	A-11
R1006	A-11
R1007	A-11
R1008	B-11
R1009	B-11
R1010	C-11
R1012	B-12
R1013	B-12
R1014	B-12
R1015	A-12
R1016	A-12
R1017	B-12
R1018	B-12
R1019	B-12
R1020	B-12
R1021	B-11
R1022	A-11
R1023	A-11
R1024	A-12
R1025	A-12
R1026	C-12
R1027	C-12
R1033	B-10
R1035	B-11
R1038	B-12
R1039	A-11
R1040	B-11
R1051	B-12
R1052	B-12
R1062	C-7
R1063	C-10
R1065	B-11
R1071	B-12
R1072	B-11
R1073	B-11
R1090	C-6
R3001	A-13
R3002	B-13
R3005	B-13
R3007	A-13
R3008	B-14
R3009	B-14
R3010	B-14
R3015	B-14
R3016	B-4
R3017	C-15
R3018	C-15
R3019	C-15
R3021	B-14
R3022	B-14
R3023	B-14
R3024	B-14
R3025	B-14
R3026	B-4
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R3028	C-4
R3029	C-4
R3032	C-5
R3036	C-5
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R3040	C-5
R3050	C-5
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R3059	D-15
R3060	D-4
R3062	C-3
R3063	D-4
R3064	C-4
R3071	B-13
R3072	A-13
R3073	C-12
R3074	C-12
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R3082	B-13
R3086	B-13
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R4018	C-16
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R4023	B-17
R4024	C-1
R4533	C-17
R4601	A-17
R4602	A-17
R4603	A-17
R4604	A-2
R4605	B-1
R4606	A-16
R4607	A-16
R4608	A-1
R4609	A-2
R4610	A-1
R4611	A-1
R4612	A-1
R4613	A-1
R4620	B-2
R4622	A-2
R4623	A-2
R4626	A-2
R4627	A-16
R4628	A-17
R4629	A-17
R5001	C-3
R5002	C-3
R5003	B-2
R5005	B-2
R5006	B-2
R5007	B-3
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R5011	B-3
R5013	B-16
R5014	B-4
R5015	B-4
R5016	B-4
R5024	A-14
R5025	A-14
R5026	A-4
R5027	A-4
R5028	B-4
R5029	A-16
R5030	B-4
R5033	C-16
R5055	C-15
R5056	C-3
R5070	C-16
R5071	C-3
R5100	B-15
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R6003	C-10
R6004	C-10
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R6012	E-7
R6013	E-12
R6014	F-12
R6015	F-12
R6016	F-12
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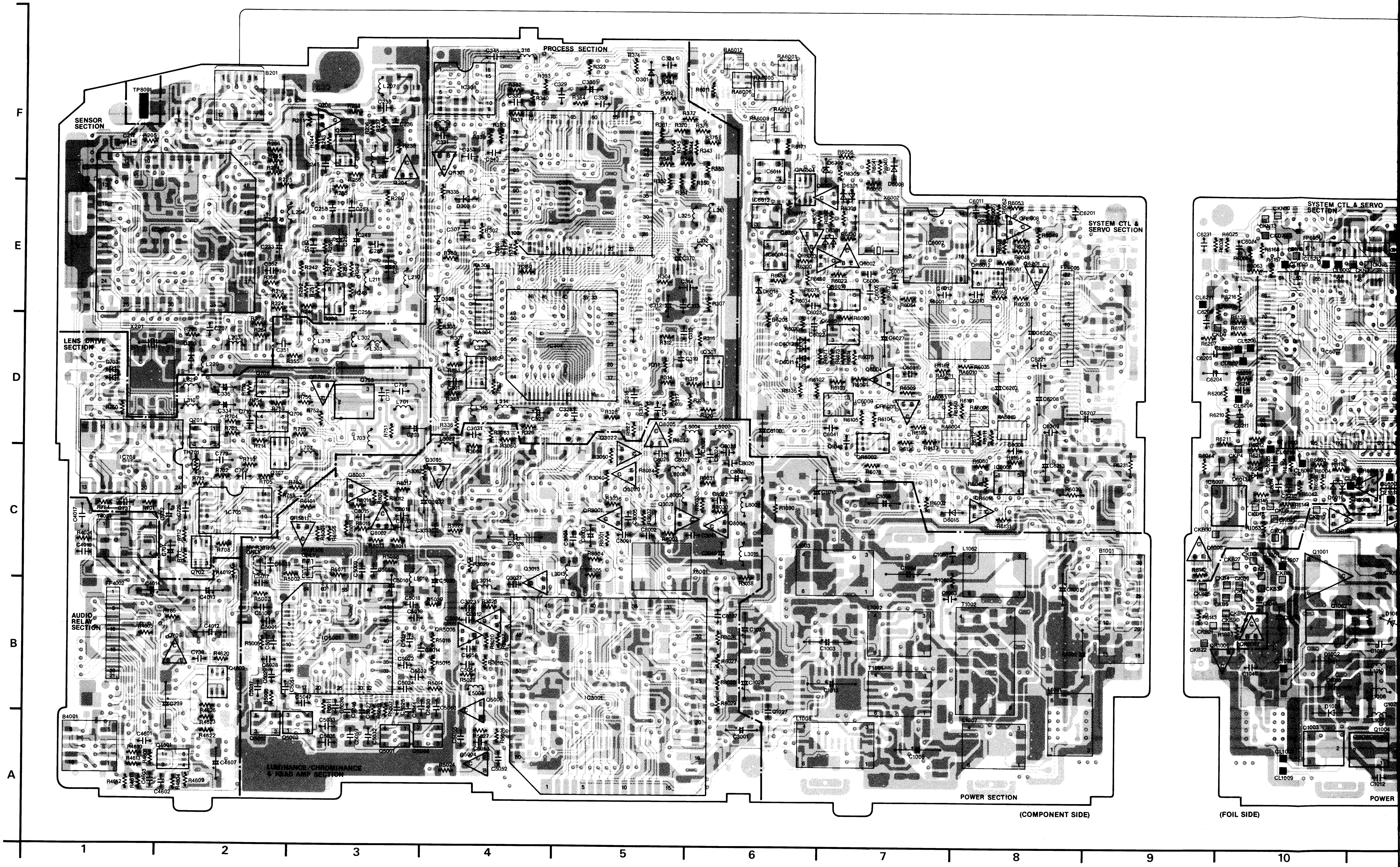
R6018	E-12
R6019	E-12
R6020	E-12
R6021	E-11
R6022	E-7
R6024	E-9
R6025	E-10
R6026	F-12
R6027	F-12
R6028	F-12
R6029	D-12
R6031	D-12
R6032	D-12
R6033	D-12
R6034	E-6
R6035	D-8
R6039	C-8
R6040	F-7
R6041	F-7
R6042	C-10
R6043	C-8
R6044	C-9
R6045	C-10
R6048	E-8
R6049	E-8
R6050	E-7
R6051	E-8
R6052	E-8
R6053	E-8
R6054	E-7
R6055	E-12
R6056	F-7
R6060	C-11
R6061	E-8
R6063	E-10
R6066	E-10
R6070	D-6
R6071	D-7
R6073	D-7
R6074	D-7
R6075	D-7
R6076	E-6
R6078	C-7
R6080	C-8
R6090	D-7
R6091	D-7
R6101	C-3
R6102	D-6
R6103	D-7
R6104	D-7
R6105	D-7
R6108	C-10
R6111	D-8
R6112	D-8
R6113	D-12
R6130	E-7
R6131	C-8
R6134	E-6
R6135	D-6
R6136	D-7
R6137	D-7
R6138	C-10
R6139	E-10
R6140	E-8
R6142	C-9
R6143	B-9
R6144	C-10
R6145	C-10
R6150	E-6
R6151	E-12
R6152	E-12
R6153	E-11
R6154	C-8
R6155	D-10
R6156	C-3
R6157	E-10
R6159	E-8
R6160	D-8
R6161	D-8
R6162	D-7
R6168	E-10
R6170	D-11
R6171	F-6
R6175	E-6
R6199	D-7
R6203	D-6
R6205	E-8
R6206	E-9
R6207	D-9
R6208	D-10
R6209	D-10
R6210	D-10
R6211	D-10
R6212	D-10
R6213	D-10
R6214	C-10
R6216	E-10
R6230	E-8
R6231	C-9
R6300	E-6
R6301	E-6
R6302	E-7
R6303	E-7
R6305	F-7
R6309	D-7
R6310	E-12
R6311	E-11
R6312	D-11
R8001	C-5
R8002	B-14
R8003	C-5
R8004	C-5
R8005	C-5
R8007	B-14
R8010	B-4
R8011	C-3
R8012	C-3
R8013	C-3
R8014	C-3
R8015	C-3
R8016	C-3
R8017	C-3
R8018	C-3
R8020	C-15
R8021	C-15
R8026	B-6
R8027	B-6
R8028	B-6
R8029	B-6
R8030	C-6
R8031	C-6
R8032	D-5
R8033	C-6
R8034	C-5
R8037	D-13
R8040	C-13
R8041	C-13
R8046	C-14
R8047	D-13
R8048	C-12
R8049	C-13
R8050	B-13
R8051	B-13
R8052	C-14
R8053	C-14
R8054	D-14

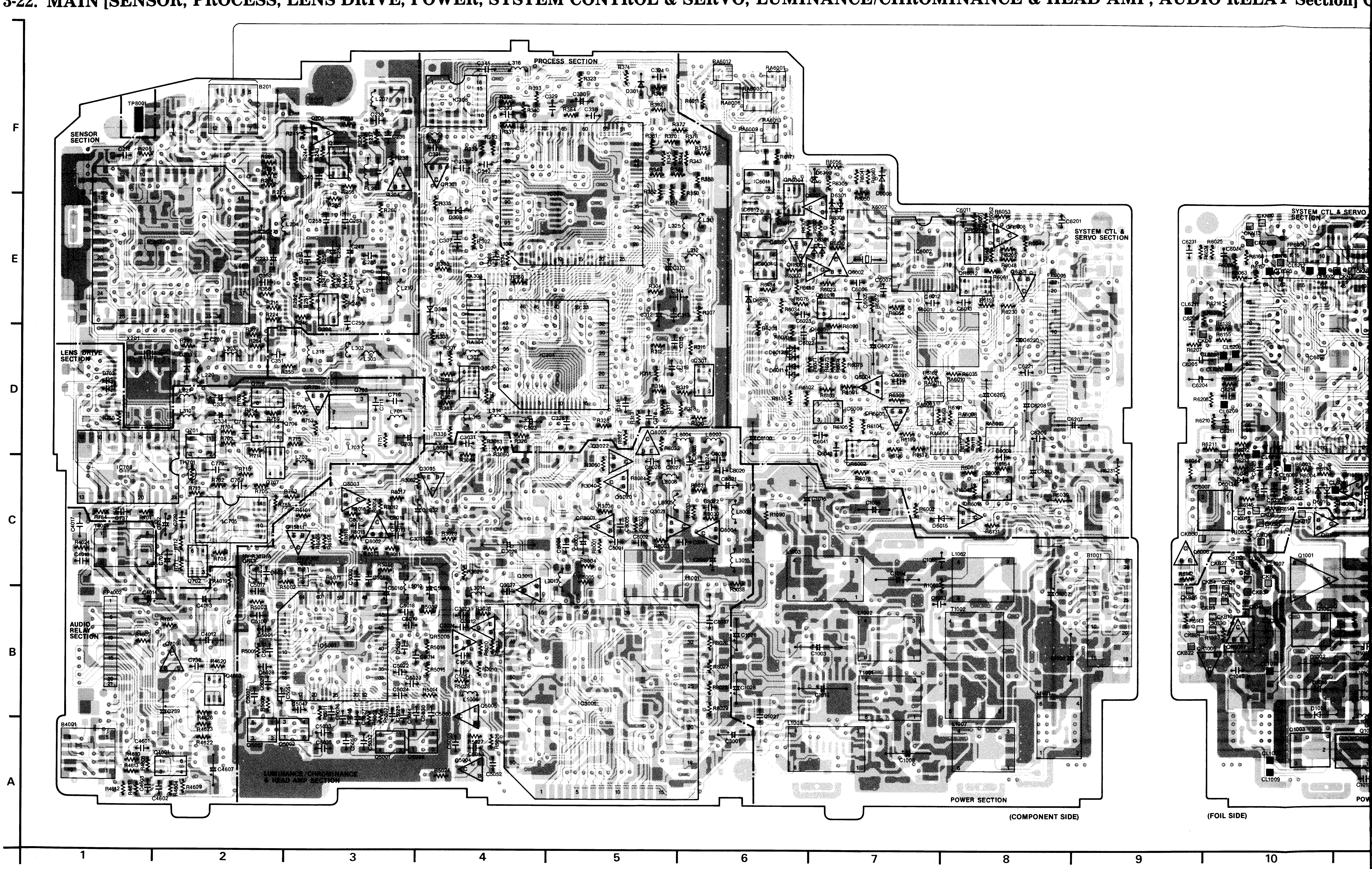
Resistor Array

RA301	E-13
RA302	E-14
RA303	E-4
RA304	D-4
RA6001	F-6
RA6003	D-7
RA6004	D-7
RA6005	F-6
RA6006	F-6
RA6007	D-8
RA6008	D-8
RA6009	F-6
RA6010	D-8
RA6011	D-7
RA6012	F-6
RA6013	F-6

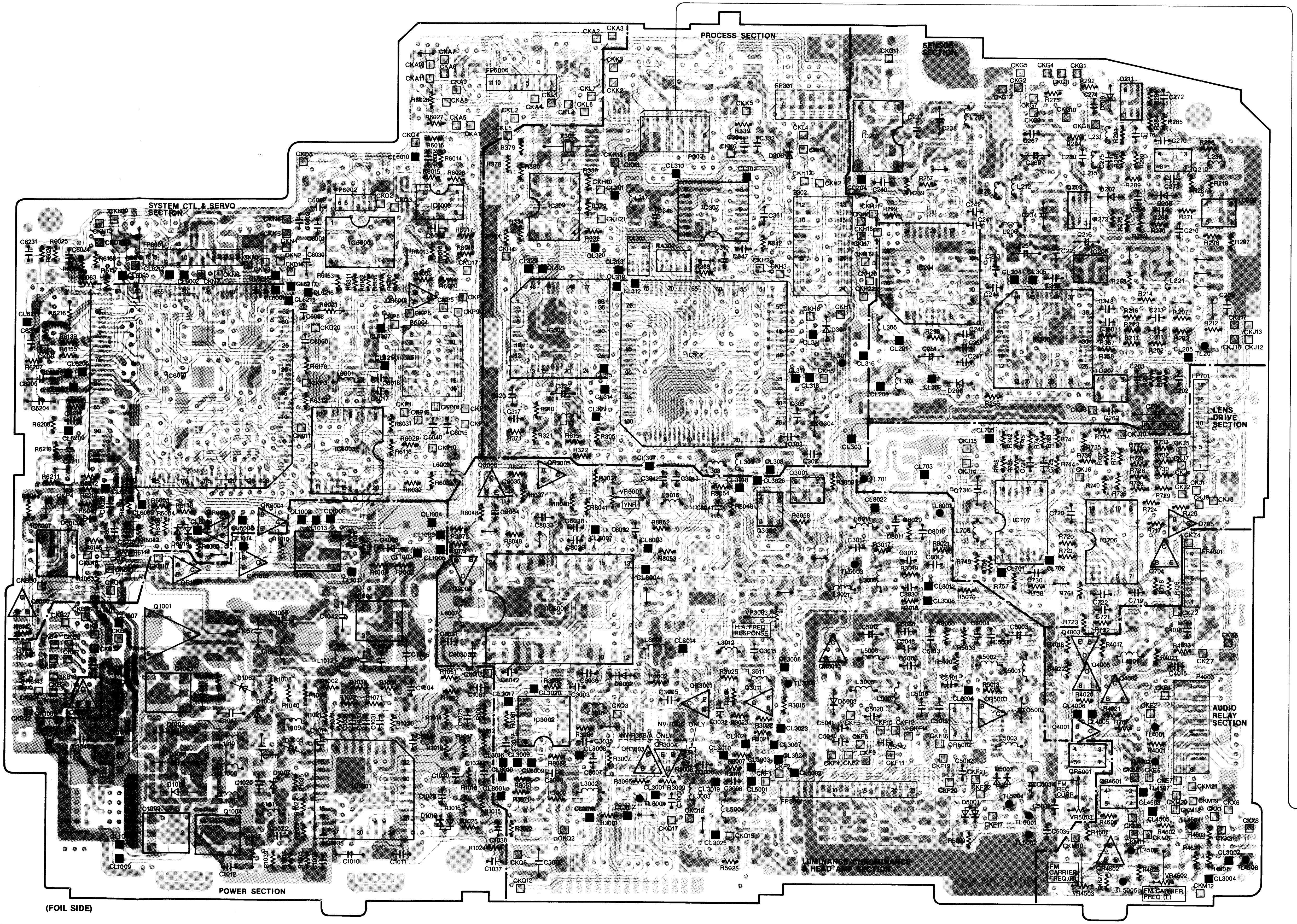
3-22. MAIN [SENSOR, PROCESS, LENS DRIVE, POWER, SYSTEM CONTROL & SERVO, LUMINANCE/CHROMINANCE & HEAD AMP, AUDIO RELAY Section] C.


F
E
D
C
B
A
SENSOR SECTION
PROCESS SECTION
LENS DRIVE SECTION
SYSTEM CTL & SERVO SECTION
AUDIO RELAY SECTION
LUMINANCE/CHROMINANCE & HEAD AMP SECTION
POWER SECTION
(COMPONENT SIDE)
SYSTEM CTL & SERVO SECTION
(FOIL SIDE)
POWER
1
2
3
4
5
6
7
8
9
10

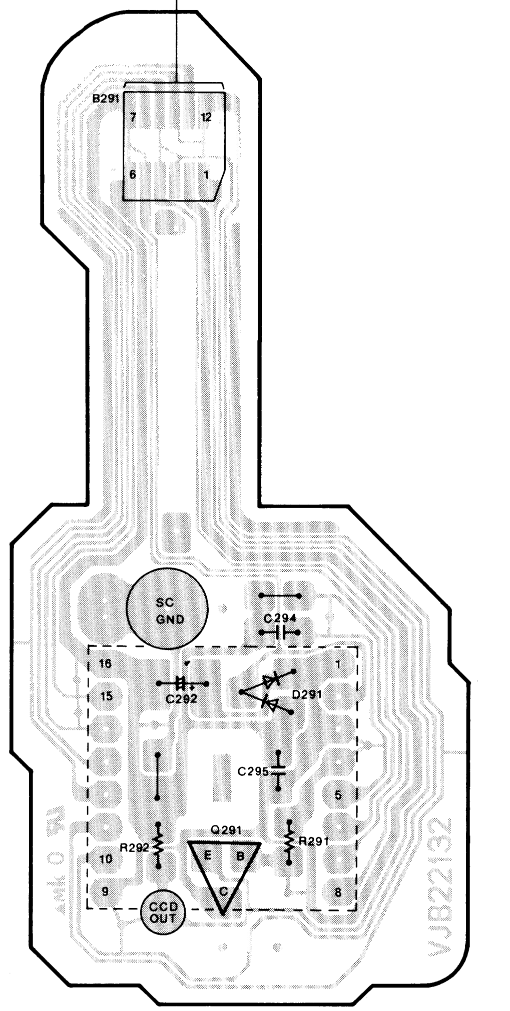
3-22. MAIN [SENSOR, PROCESS, LENS DRIVE, POWER, SYSTEM CONTROL & SERVO, LUMINANCE/CHROMINANCE & HEAD AMP, AUDIO RELAY Section]


SENSOR SECTION
PROCESS SECTION
LENS DRIVE SECTION
SYSTEM CTL & SERVO SECTION
AUDIO RELAY SECTION
LUMINANCE/CHROMINANCE & HEAD AMP SECTION
POWER SECTION
(COMPONENT SIDE)
(FOIL SIDE)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

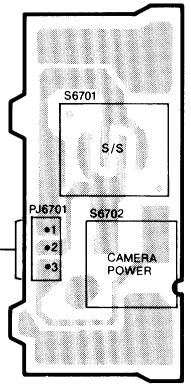
P, AUDIO RELAY Section] C.B.A. (VEP23202A: NV-R30B/A) (VEP23202B: NV-R30E)


PROCESS SECTION
SENSOR SECTION
SYSTEM CTL & SERVO SECTION
LENS DRIVE SECTION
AUDIO RELAY SECTION
LUMINANCE/CHROMINANCE & HEAD AMP SECTION
POWER SECTION
(FOIL SIDE)
H.A. FREQ. RESPONSE
YNR
NV-R30B/A ONLY
NV-R30E ONLY
PLL FREQ.
FM REC CURR.
FM CARRIER FREQ.(R)
FM CARRIER FREQ.(L)

CCD FLEX. CARD
C.B.A. (VEK7107)


B291
SC GND
C294
C292
D291
C295
R292
Q291
R291
CCD OUT
VJB22132

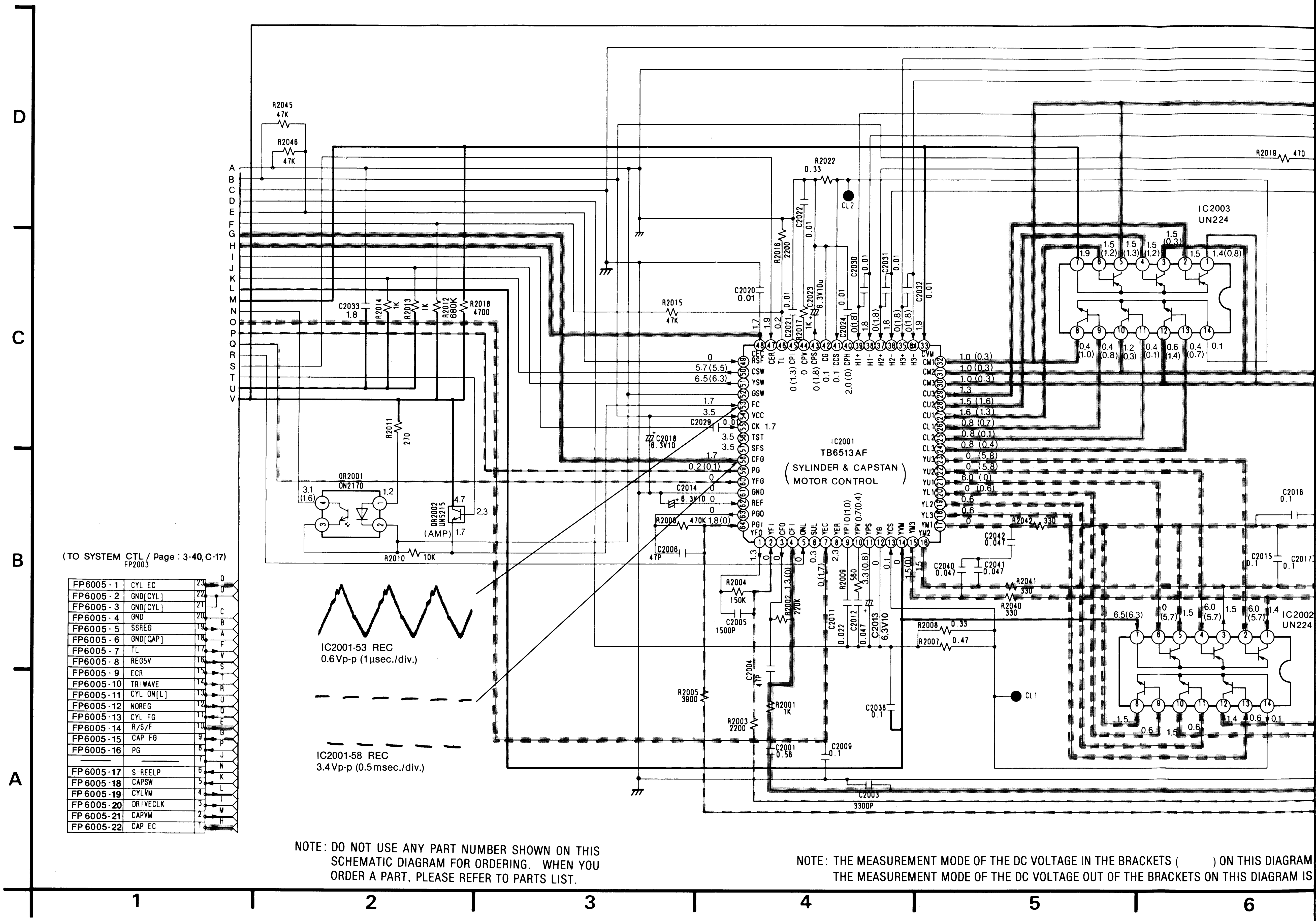
S/S C.B.A. (VEP00T11C)


S6701
S/S
PJ6701
S6702
CAMERA POWER

10 11 12 13 14 15 16 17 18 19

3-23. DRIVE SCHEMATIC DIAGRAM

CAPSTAN SERVO SPEED LOO
CAPSTAN SERVO PHASE LOO



D
C
B
A
1
2
3
4
5
6
IC2001
TB6513AF
(SYLINDER & CAPSTAN MOTOR CONTROL)
IC2003
UN224
IC2002
UN224
QR2001
ON2170
QR2002
UN5215
(AMP)
CL1
CL2
R2045 47K
R2046 47K
R2022 0.33
R2019 470
R2015 47K
R2014 1K
R2013 1K
R2012 680K
R2018 4700
R2011 270
R2010 10K
R2004 150K
R2002 220K
R2009 580
R2005 3900
R2003 2200
R2001 1K
R2008 0.33
R2007 0.47
R2042 330
R2041 330
R2040 330
C2033 1.8
C2020 0.01
C2029
C2018 6.3V10
C2014
C2008 47P
C2005 1500P
C2011 0.022
C2012 0.047
C2013 6.3V10
C2004 47P
C2001 0.58
C2009 0.1
C2003 3300P
C2036 0.1
C2040 0.047
C2041 0.047
C2042 0.047
C2015 0.1
C2017 0.1
C2016 0.1
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V

(TO SYSTEM CTL / Page : 3-40, C-17)
FP2003

FP6005 - 1	CYL EC	23	O
FP6005 - 2	GND[CYL]	22	D
FP6005 - 3	GND[CYL]	21	
FP6005 - 4	GND	20	C
FP6005 - 5	SSREG	19	B
FP6005 - 6	GND[CAP]	18	A
FP6005 - 7	TL	17	F
FP6005 - 8	REG5V	16	V
FP6005 - 9	ECR	15	S
FP6005 - 10	TRIWAVE	14	T
FP6005 - 11	CYL ON[L]	13	R
FP6005 - 12	NOREG	12	U
FP6005 - 13	CYL FG	11	Q
FP6005 - 14	R/S/F	10	E
FP6005 - 15	CAP FG	9	G
FP6005 - 16	PG	8	P
——	——	7	J
FP6005 - 17	S-REELP	6	N
FP6005 - 18	CAPSW	5	K
FP6005 - 19	CYLVM	4	L
FP6005 - 20	DRIVECLK	3	I
FP6005 - 21	CAPVM	2	M
FP6005 - 22	CAP EC	1	H

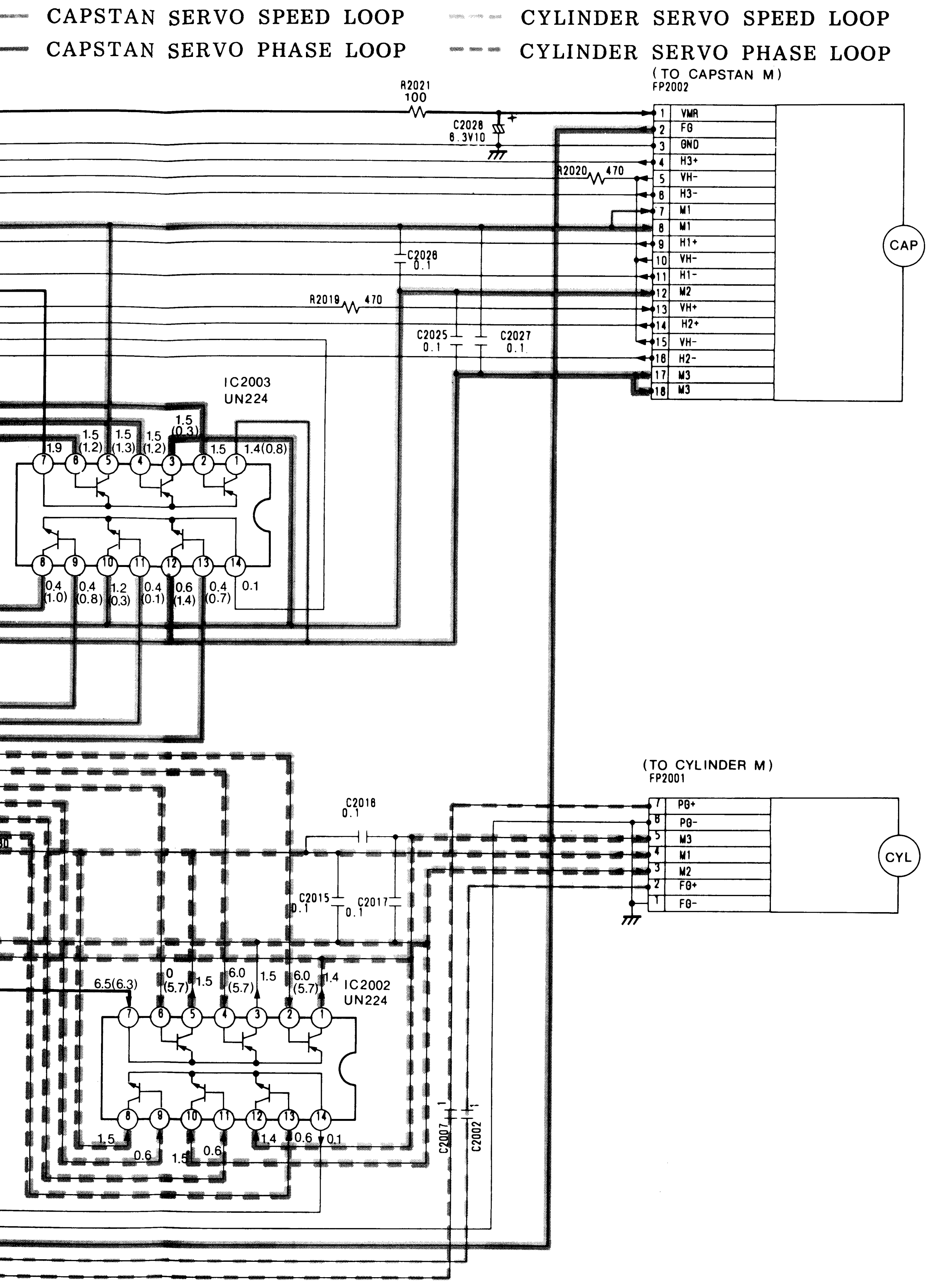
IC2001-53 REC
0.6Vp-p (1μsec./div.)

IC2001-58 REC
3.4Vp-p (0.5msec./div.)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS

Back Page:
MAIN C.B.A. Section

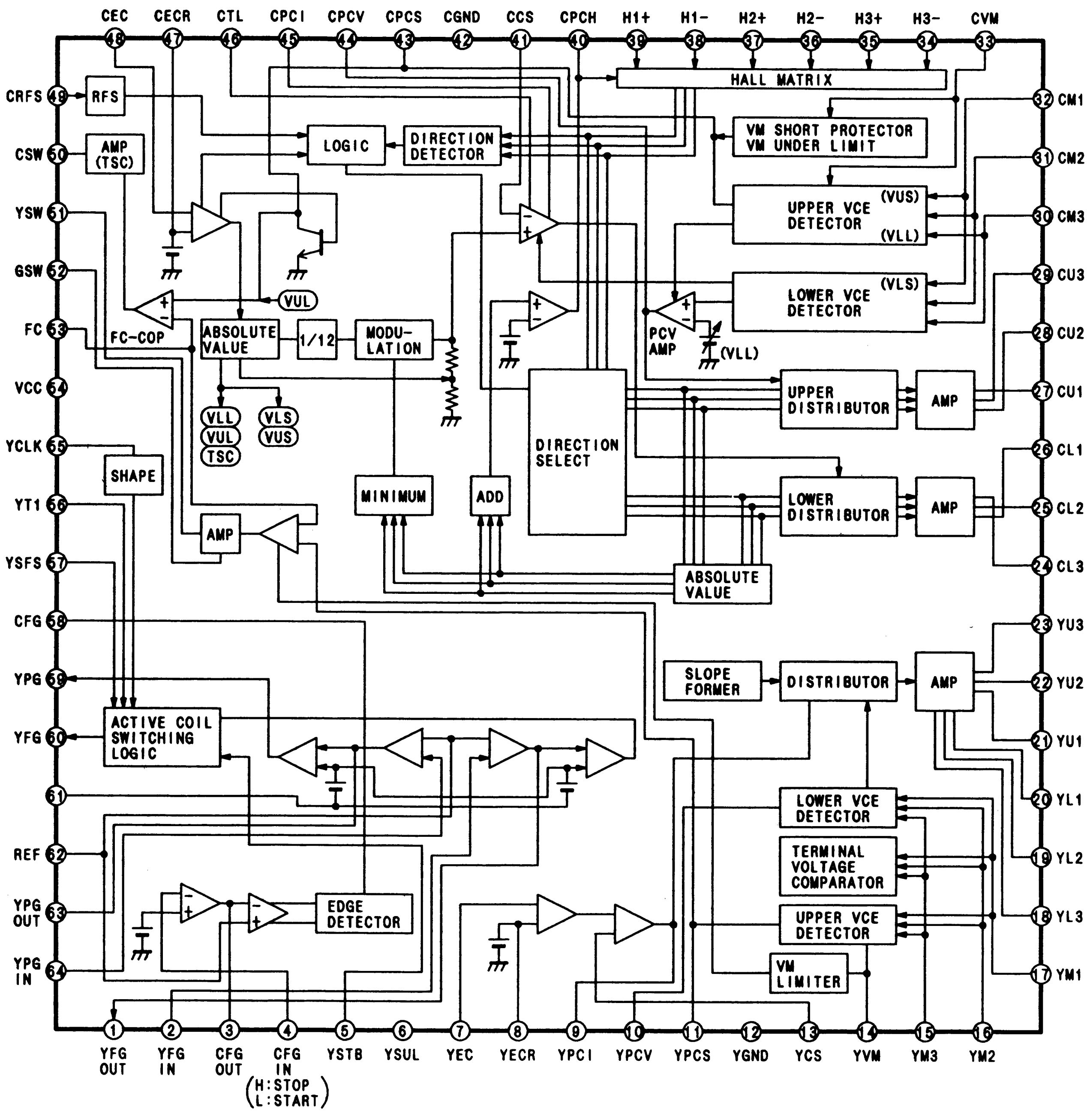

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
(TO CAPSTAN M)
FP2002
R2021
100
C2028
6.3V10
R2020 470
C2026
0.1
R2019 470
C2025
0.1
C2027
0.1
1 VMR
2 FG
3 GND
4 H3+
5 VH-
6 H3-
7 M1
8 M1
9 H1+
10 VH-
11 H1-
12 M2
13 VH+
14 H2+
15 VH-
16 H2-
17 M3
18 M3
CAP
IC2003
UN224
(TO CYLINDER M)
FP2001
C2018
0.1
7 PG+
6 PG-
5 M3
4 M1
3 M2
2 FG+
1 FG-
CYL
C2015
0.1
C2017
0.1
IC2002
UN224
C2007
C2002

TAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE (SP MODE)
TAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE

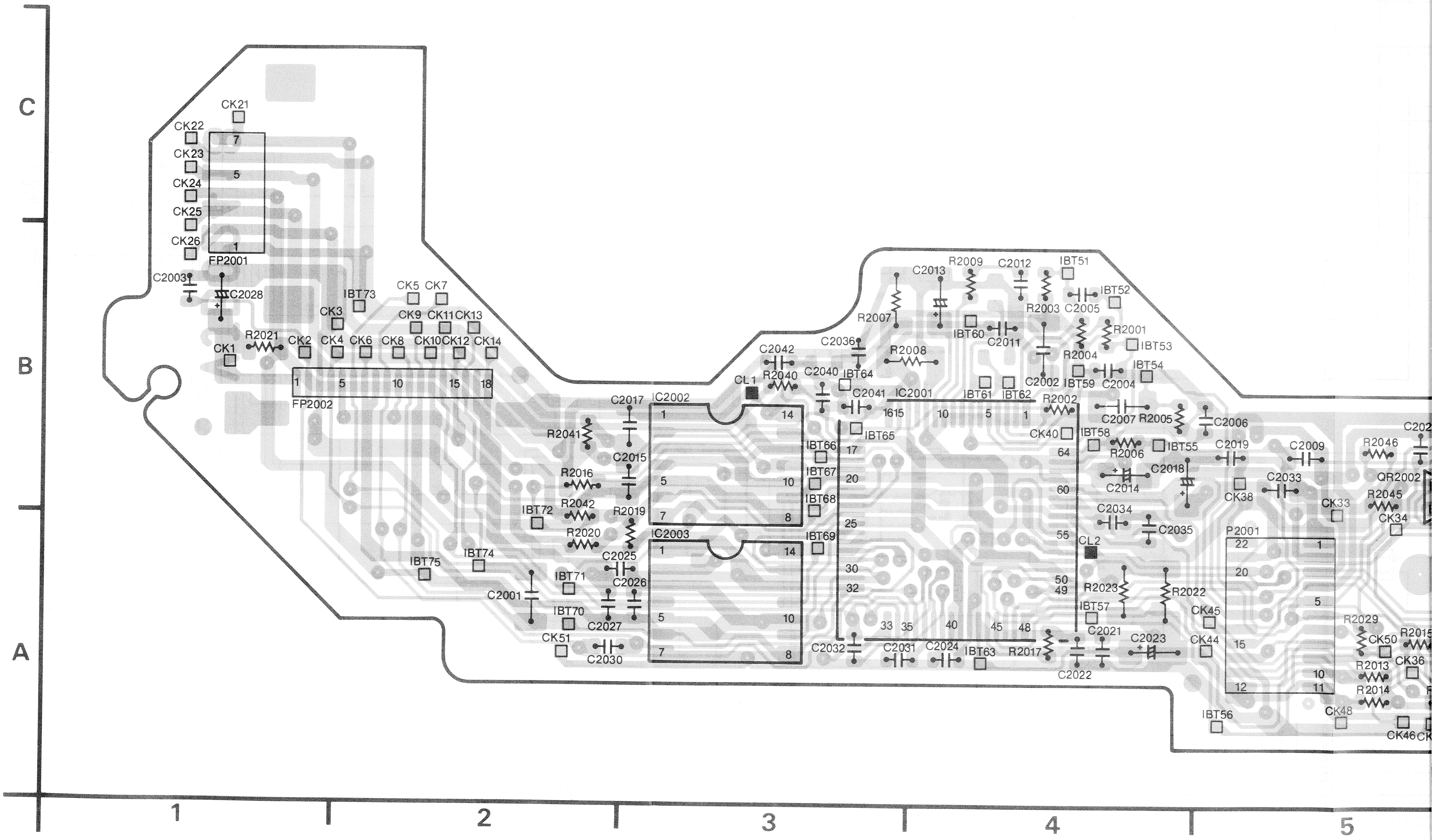
6 7

IC BLOCK

IC2001 (TB6513AF)


CEC
CECR
CTL
CPCI
CPCV
CPCS
CGND
CCS
CPCH
H1+
H1-
H2+
H2-
H3+
H3-
CVM
CRFS
CSW
YSW
GSW
FC
VCC
YCLK
YT1
YSFS
CFG
YPG
YFG
REF
YPG OUT
YPG IN
CM1
CM2
CM3
CU3
CU2
CU1
CL1
CL2
CL3
YU3
YU2
YU1
YL1
YL2
YL3
YM1
YFG OUT
YFG IN
CFG OUT
CFG IN
(H:STOP L:START)
YSTB
YSUL
YEC
YECR
YPCI
YPCV
YPCS
YGND
YCS
YVM
YM3
YM2
HALL MATRIX
RFS
AMP (TSC)
LOGIC
DIRECTION DETECTOR
VM SHORT PROTECTOR
VM UNDER LIMIT
UPPER VCE DETECTOR
(VUS)
(VLL)
LOWER VCE DETECTOR
(VLS)
PCV AMP
FC-COP
ABSOLUTE VALUE
1/12
MODU-LATION
VUL
VLL
VLS
VUS
TSC
UPPER DISTRIBUTOR
AMP
DIRECTION SELECT
SHAPE
MINIMUM
ADD
LOWER DISTRIBUTOR
ABSOLUTE VALUE
SLOPE FORMER
DISTRIBUTOR
ACTIVE COIL SWITCHING LOGIC
EDGE DETECTOR
LOWER VCE DETECTOR
TERMINAL VOLTAGE COMPARATOR
UPPER VCE DETECTOR
VM LIMITER

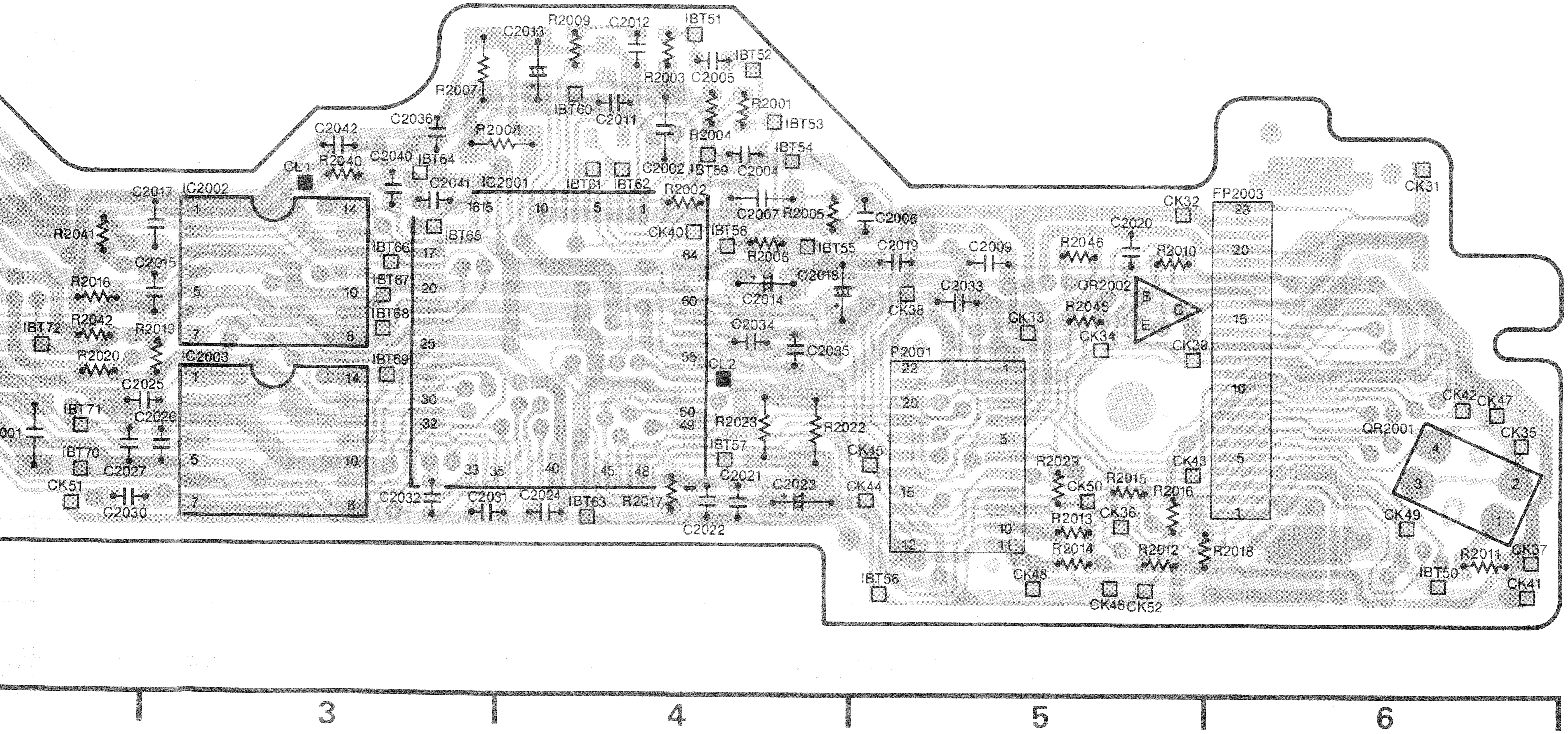
3-24. DRIVE C.B.A. (VEP02418A)



C
B
A
1
2
3
4
5
CK21
CK22
CK23
CK24
CK25
CK26
7
5
1
FP2001
C2003
C2028
IBT73
CK5
CK7
CK3
CK9
CK11
CK13
R2021
CK1
CK2
CK4
CK6
CK8
CK10
CK12
CK14
1
5
10
15
18
FP2002
C2017
IC2002
CL1
R2040
C2042
C2036
C2040
IBT64
C2041
IC2001
R2041
C2015
R2016
R2042
IBT72
R2019
R2020
IC2003
C2025
C2026
IBT71
IBT75
IBT74
C2001
IBT70
C2027
CK51
C2030
IBT66
IBT67
IBT68
IBT69
IBT65
C2032
C2031
C2024
IBT63
R2017
C2022
C2013
R2009
C2012
IBT51
IBT52
R2007
R2003
C2005
IBT60
C2011
R2001
IBT53
R2008
R2004
IBT54
IBT61
IBT62
C2002
IBT59
C2004
R2002
C2007
R2005
C2006
CK40
IBT58
R2006
IBT55
C2019
C2009
R2046
C2014
C2018
CK38
C2033
QR2002
R2045
CK33
CK34
C2034
C2035
CL2
P2001
R2023
R2022
IBT57
C2021
C2023
CK45
CK44
R2029
CK50
R2013
CK36
R2014
CK48
IBT56
CK46
16 15
10
5
1
64
60
55
50
49
17
20
25
30
32
33
35
40
45
48
14
10
8
22
20
15
12
11

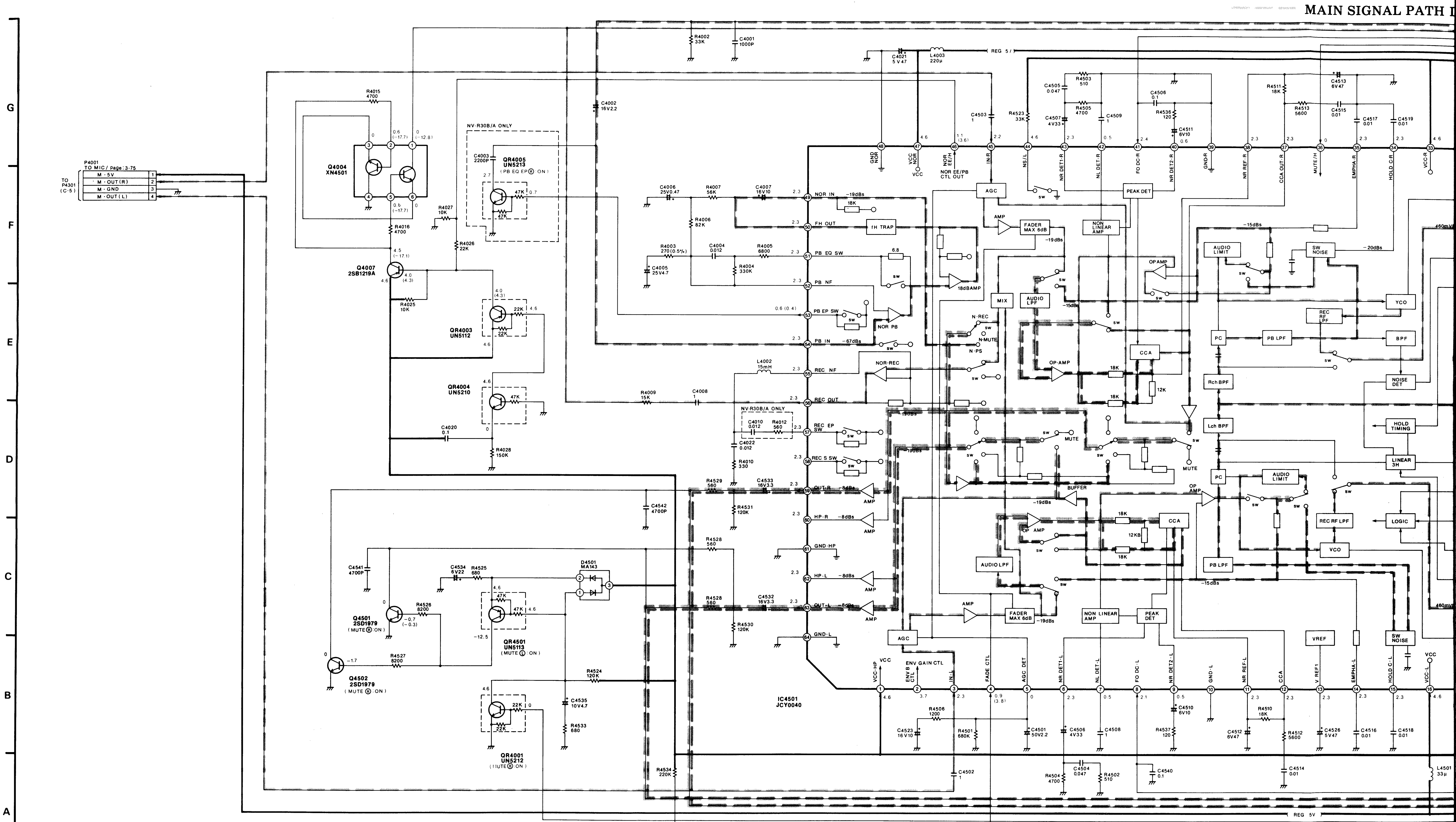
DRIVE C.B.A.	
Transistor & Resistor	
QR2001	A-6
QR2002	B-5
Integrated Circuit	
IC2001	B-4
IC2002	B-3
IC2003	A-3
Connector	
FP2001	B-1
FP2002	B-1
FP2003	B-6
P2001	A-5

ADDRESS INFORMATION


R2009
C2013
C2012
IBT51
IBT52
R2003
C2005
R2007
IBT60
C2011
R2001
IBT53
C2036
R2008
R2004
C2042
C2040
IBT64
IBT59
C2004
IBT54
CL1
R2040
C2002
C2041
IC2001
IBT61
IBT62
R2002
C2017
IC2002
C2007
R2005
C2006
CK40
IBT58
IBT55
R2041
IBT65
IBT66
R2006
C2019
C2009
CK32
FP2003
CK31
C2015
C2018
C2020
R2046
R2010
R2016
IBT67
C2014
C2033
QR2002
CK38
IBT68
R2045
IBT72
R2042
R2019
C2034
CK33
CK34
C2035
CK39
R2020
IC2003
IBT69
CL2
P2001
C2025
C2026
IBT71
R2023
R2022
CK42
CK47
QR2001
CK35
IBT57
CK45
IBT70
C2027
C2021
R2029
CK43
CK51
C2030
C2032
C2031
C2024
IBT63
R2017
C2023
CK44
CK50
R2015
R2016
C2022
R2013
CK36
CK49
R2014
R2012
R2018
R2011
CK37
IBT56
CK48
IBT50
CK41
CK46
CK52
B
C
E
1
2
3
4
3
4
5
6

Next Page:
AUDIO MAIN Section

3-25. AUDIO MAIN SCHEMATIC DIAGRAM


MAIN SIGNAL PATH
G
F
E
D
C
B
A
P4001
TO MIC / Page: 3-75
TO P4301 (C-5)
M-5V
M-OUT(R)
M-GND
M-OUT(L)
Q4004 XN4501
Q4007 2SB1219A
QR4005 UN5213 (PB EQ EP Ⓗ ON)
NV-R30B/A ONLY
QR4003 UN5112
QR4004 UN5210
Q4501 2SD1979 (MUTE Ⓗ ON)
Q4502 2SD1979 (MUTE Ⓗ ON)
QR4501 UN5113 (MUTE Ⓛ ON)
QR4001 UN5212 (MUTE Ⓗ ON)
D4501 MA143
IC4501 JCY0040
R4002 33K
C4001 1000P
C4021 5V47
L4003 220μ
REG 5V
R4015 4700
R4016 4700
R4025 10K
R4026 22K
R4027 10K
R4028 150K
C4003 2200P
C4002 16V2.2
C4020 0.1
C4006 25V0.47
R4007 56K
C4007 16V10
R4006 82K
R4003 270(0.5%)
C4004 0.012
R4005 6800
C4005 25V4.7
R4004 330K
L4002 15mH
R4009 15K
C4008 1
C4010 0.012
R4012 560
C4022 0.012
R4010 330
R4529 560
C4533 16V3.3
R4531 120K
C4542 4700P
R4528 560
C4532 16V3.3
R4530 120K
R4534 220K
C4541 4700P
C4534 6V22
R4525 680
R4526 8200
R4527 8200
R4524 120K
C4535 10V4.7
R4533 680
C4503 1
R4523 33K
C4505 0.047
R4503 510
R4505 4700
C4507 4V33
C4509
C4506 0.1
R4536 120
C4511 6V10
R4511 18K
C4513 6V47
R4513 5600
C4515 0.01
C4517 0.01
C4519 0.01
R4506 1200
C4523 16V10
R4501 680K
C4501 50V2.2
C4506 4V33
C4508 1
R4537 120
C4510 6V10
C4512 6V47
R4510 18K
R4512 5600
C4526 5V47
C4516 0.01
C4518 0.01
C4502 1
R4504 4700
C4504 0.047
R4502 510
C4540 0.1
C4514 0.01
L4501 33μ
REG 5V
GND NOR
VCC NOR
NOR EE/H
NOR EE/PB CTL OUT
IN-R
NS/L
NR DET1-R
NL DET-R
FO DC-R
NR DET2-R
GND-R
NR REF-R
CCA OUT-R
MUTE/H
EMPHA-R
HOLD C-R
VCC-R
NOR IN -19dBs
FH OUT
PB EQ SW
PB NF
PB EP SW
PB IN -67dBs
REC NF
REC OUT
REC EP SW
REC S SW
OUT-R -8dBs
HP-R -8dBs
GND-HP
HP-L -8dBs
OUT-L -8dBs
GND-L
VCC-HP
ENV GAIN CTL
IN-L
FADE CTL
AGC DET
NR DET1-L
NL DET-L
FO DC-L
NR DET2-L
GND-L
NR REF-L
CCA
V REF1
EMPHA-L
HOLD C-L
VCC-L
FH TRAP
18dBAMP
NOR PB
NOR-REC
AGC
AMP
FADER MAX 6dB
NON LINEAR AMP
PEAK DET
MIX
AUDIO LPF
OP AMP
CCA
N-REC
N-MUTE
N-PS
MUTE
BUFFER
AUDIO LIMIT
SW NOISE
REC RF LPF
YCO
BPF
PC
PB LPF
Rch BPF
Lch BPF
NOISE DET
HOLD TIMING
LINEAR 3H
REC RF LPF
LOGIC
VCO
VREF
SW NOISE
-15dBs
-19dBs
-20dBs
460mV
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (　　) ON THIS DIAGRAM IS RECORD MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

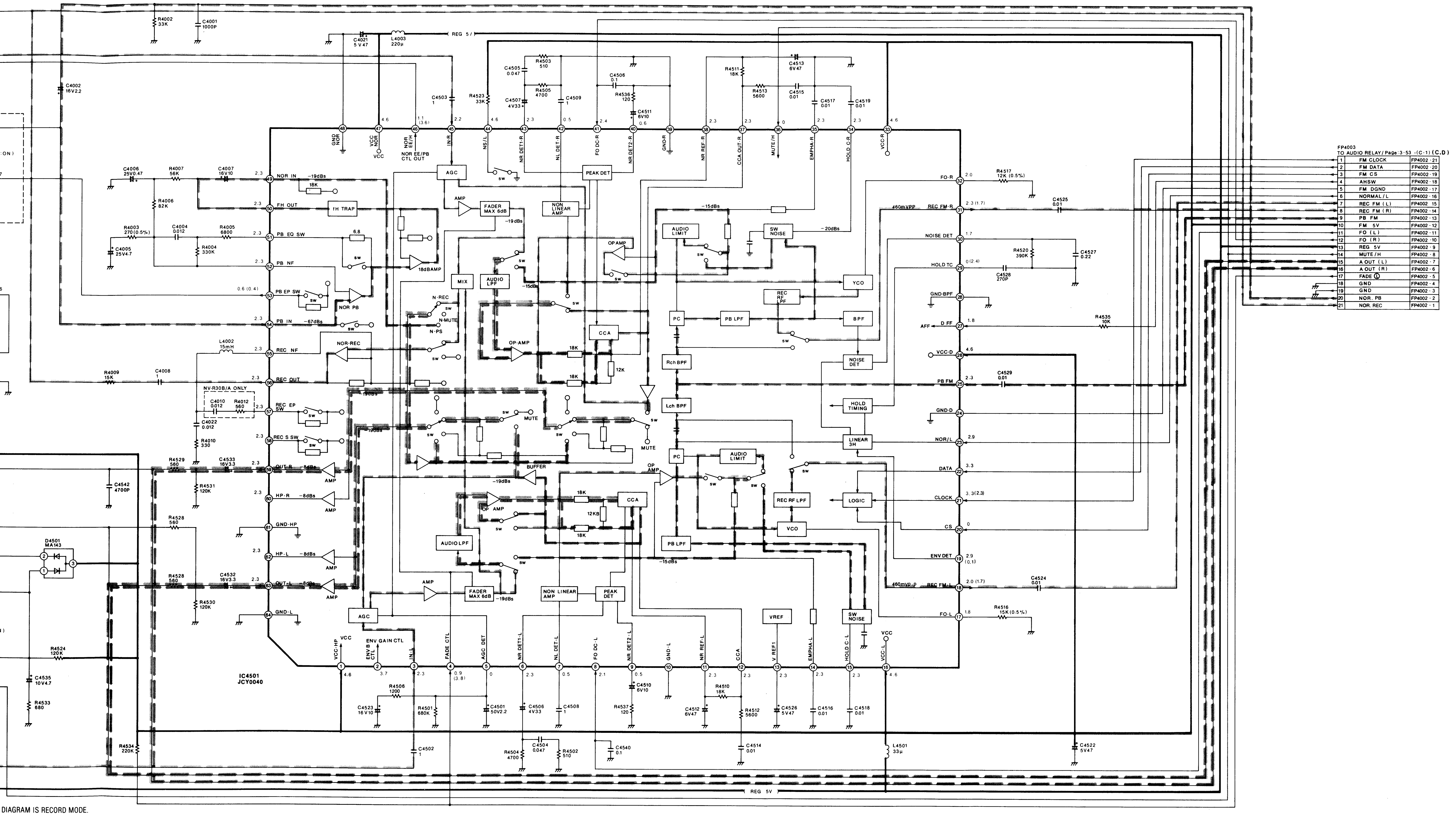

IC4501
JCY0040
REG 5V
NR DET1-R
NL DET-R
FO DC-R
NR DET2-R
GND-R
NR REF-R
CCA OUT-R
MUTE/H
EMPHA-R
HOLD C-R
VCC-R
NOR IN
FH OUT
PB EQ SW
PB NF
PB EP SW
PB IN
REC NF
REC OUT
REC EP SW
REC S SW
OUT-R
HP-R
GND-HP
HP-L
OUT-L
GND-L
VCC-HP
ENV GAIN CTL
IN-L
FADE CTL
AGC DET
NR DET1-L
NL DET-L
FO DC-L
NR DET2-L
NR REF-L
CCA
V REF1
EMPHA-L
HOLD C-L
VCC-L
FO-R
REC FM-R
NOISE DET
HOLD TC
GND-BPF
D FF
VCC-D
PB FM
GND-D
NOR/L
DATA
CLOCK
CS
ENV DET
REC FM-L
FO-L
AGC
FADER MAX 6dB
NON LINEAR AMP
PEAK DET
AUDIO LIMIT
SW NOISE
YCO
REC RF LPF
PC
PB LPF
BPF
CCA
Rch BPF
Lch BPF
NOISE DET
HOLD TIMING
LINEAR 3H
LOGIC
VCO
VREF
AUDIO LPF
MIX
OP AMP
BUFFER
MUTE
18dBAMP
NOR PB
NOR-REC
fH TRAP
NV-R30B/A ONLY
D4501
MA143
FP4003
TO AUDIO RELAY / Page: 3-53 ,(C-1) (C,D)
1 FM CLOCK FP4002-21
2 FM DATA FP4002-20
3 FM CS FP4002-19
4 AHSW FP4002-18
5 FM DGND FP4002-17
6 NORMAL/L FP4002-16
7 REC FM (L) FP4002 15
8 REC FM (R) FP4002-14
9 PB FM FP4002-13
10 FM 5V FP4002-12
11 FO (L) FP4002-11
12 FO (R) FP4002-10
13 REG 5V FP4002-9
14 MUTE/H FP4002-8
15 A OUT (L) FP4002-7
16 A OUT (R) FP4002-6
17 FADE Ⓛ FP4002-5
18 GND FP4002-4
19 GND FP4002-3
20 NOR. PB FP4002-2
21 NOR. REC FP4002-1

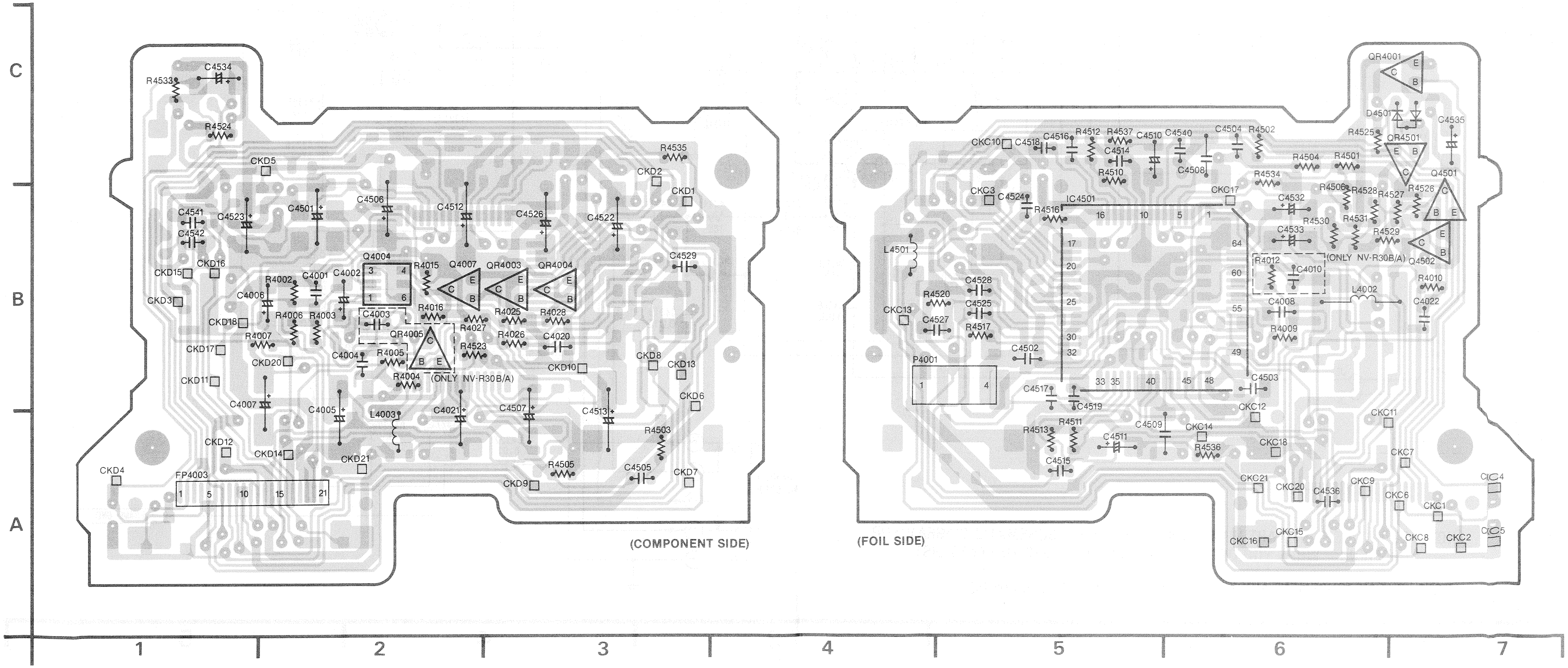
DIAGRAM IS RECORD MODE.
AGRAM IS PLAYBACK MODE.

5 6 7 8 9 10 11 12 13 14 15 16 17

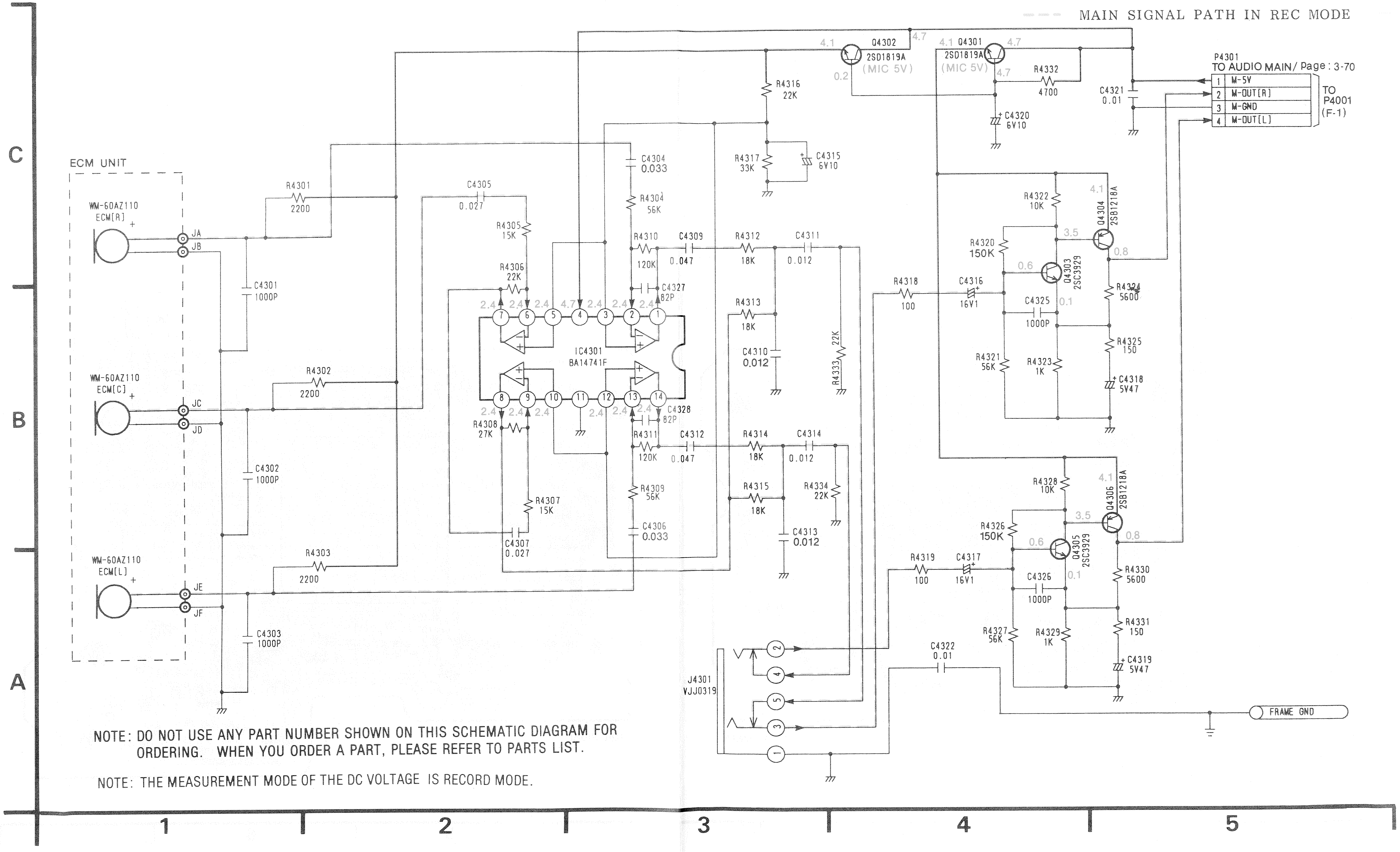
3-26. AUDIO MAIN C.B.A. (VEP04452A: NV-R30B/A) (VEP04452B: NV-R30E)

AUDIO MAIN C.B.A.	
Integrated Circuit	
IC4501	B-5
Transistor	
Q4004 Q4007 Q4501 Q4502	B-2 B-2 B-7 B-7
Transistor & Resistor	
QR4001 QR4003 QR4004 QR4005 QR4501	C-7 B-3 B-3 B-2 C-7
Connector	
FP4003 P4001	A-1 B-4

ADDRESS INFORMATION


C
B
A
1
2
3
4
5
6
7
R4533
C4534
R4524
CKD5
C4541
C4542
C4523
C4501
C4506
C4512
C4526
C4522
R4535
CKD2
CKD1
C4529
CKD15
CKD16
CKD3
R4002
C4006
C4001
C4002
Q4004
R4015
Q4007
QR4003
QR4004
CKD18
R4006
R4003
R4007
C4003
QR4005
R4016
R4027
R4025
R4028
R4026
C4020
CKD17
R4523
CKD20
C4004
R4005
R4004
(ONLY NV-R30B/A)
CKD10
CKD8
CKD13
CKD11
CKD6
C4007
C4005
L4003
C4021
C4507
C4513
R4503
CKD12
CKD14
CKD21
R4505
C4505
CKD7
CKD4
FP4003
CKD9
(COMPONENT SIDE)
QR4001
D4501
C4535
R4525
QR4501
CKC10
C4518
C4516
R4512
R4537
C4514
C4510
C4540
C4504
R4502
R4504
R4501
R4510
C4508
R4534
Q4501
CKC3
C4524
R4516
IC4501
CKC17
R4506
R4528
R4527
R4526
C4532
C4533
R4530
R4531
R4529
L4501
R4012
C4010
(ONLY NV-R30B/A)
Q4502
R4010
C4528
R4520
C4525
L4002
C4022
CKC13
C4527
R4517
C4008
R4009
C4502
P4001
C4503
C4517
C4519
CKC12
R4513
R4511
C4509
CKC14
C4511
R4536
CKC18
CKC11
C4515
CKC7
CKC21
CKC20
C4536
CKC9
CKC6
CKC4
CKC1
CKC15
CKC16
CKC8
CKC2
CKC5
(FOIL SIDE)

3-27. MIC SCHEMATIC DIAGRAM



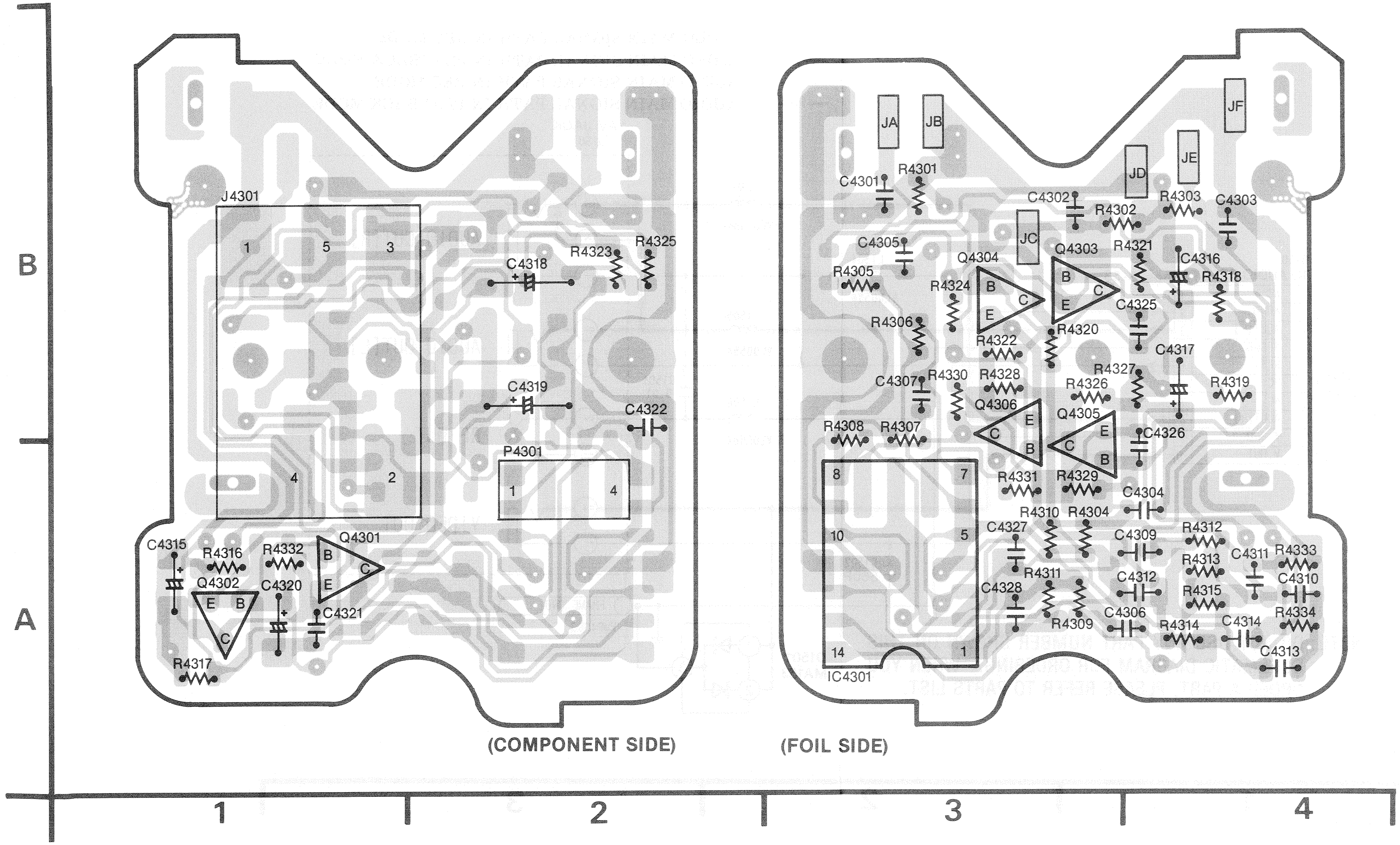
MAIN SIGNAL PATH IN REC MODE
ECM UNIT
WM-60AZ110
ECM[R]
WM-60AZ110
ECM[C]
WM-60AZ110
ECM[L]
JA
JB
JC
JD
JE
JF
R4301
2200
R4302
2200
R4303
2200
C4301
1000P
C4302
1000P
C4303
1000P
C4305
0.027
R4305
15K
R4306
22K
R4308
27K
R4307
15K
C4307
0.027
C4304
0.033
R4304
56K
R4310
120K
C4309
0.047
C4327
82P
C4328
82P
R4311
120K
C4312
0.047
R4309
56K
C4306
0.033
IC4301
BA14741F
R4316
22K
R4317
33K
C4315
6V10
R4312
18K
C4311
0.012
R4313
18K
C4310
0.012
R4333
22K
R4314
18K
C4314
0.012
R4315
18K
C4313
0.012
R4334
22K
Q4302
2SD1819A
(MIC 5V)
Q4301
2SD1819A
(MIC 5V)
R4332
4700
C4320
6V10
C4321
0.01
P4301
TO AUDIO MAIN/ Page : 3-70
1 M-5V
2 M-OUT[R]
3 M-GND
4 M-OUT[L]
TO
P4001
(F-1)
R4318
100
C4316
16V1
R4320
150K
R4322
10K
Q4303
2SC3929
Q4304
2SB1218A
R4324
5600
C4325
1000P
R4325
150
R4321
56K
R4323
1K
C4318
5V47
R4319
100
C4317
16V1
R4326
150K
R4328
10K
Q4305
2SC3929
Q4306
2SB1218A
R4330
5600
C4326
1000P
R4331
150
R4327
56K
R4329
1K
C4319
5V47
C4322
0.01
J4301
VJJ0319
FRAME GND
4.1
0.2
4.7
3.5
0.6
0.8
0.1
2.4
C
B
A
1
2
3
4
5

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IS RECORD MODE.

Back Page:
AUDIO MAIN Section

3-28. MIC UNIT (VEK6715)


B
A
1
2
3
4
J4301
1
5
3
4
2
C4318
R4323
R4325
C4319
C4322
P4301
1
4
C4315
R4316
R4332
Q4301
B
C
E
Q4302
E
B
C
C4320
C4321
R4317
JA
JB
JF
JE
JD
JC
C4301
R4301
C4302
R4302
R4303
C4303
C4305
Q4304
Q4303
R4321
C4316
R4305
R4324
B
C
E
B
C
E
R4318
C4325
R4306
R4320
R4322
C4317
R4327
C4307
R4330
R4328
R4326
R4319
Q4306
Q4305
E
C
B
E
C
B
C4326
R4308
R4307
8
7
10
5
14
1
IC4301
R4331
R4329
C4304
R4310
R4304
C4327
C4309
R4312
R4313
C4311
R4333
R4311
C4312
C4310
C4328
R4315
R4309
C4306
R4314
C4314
R4334
C4313

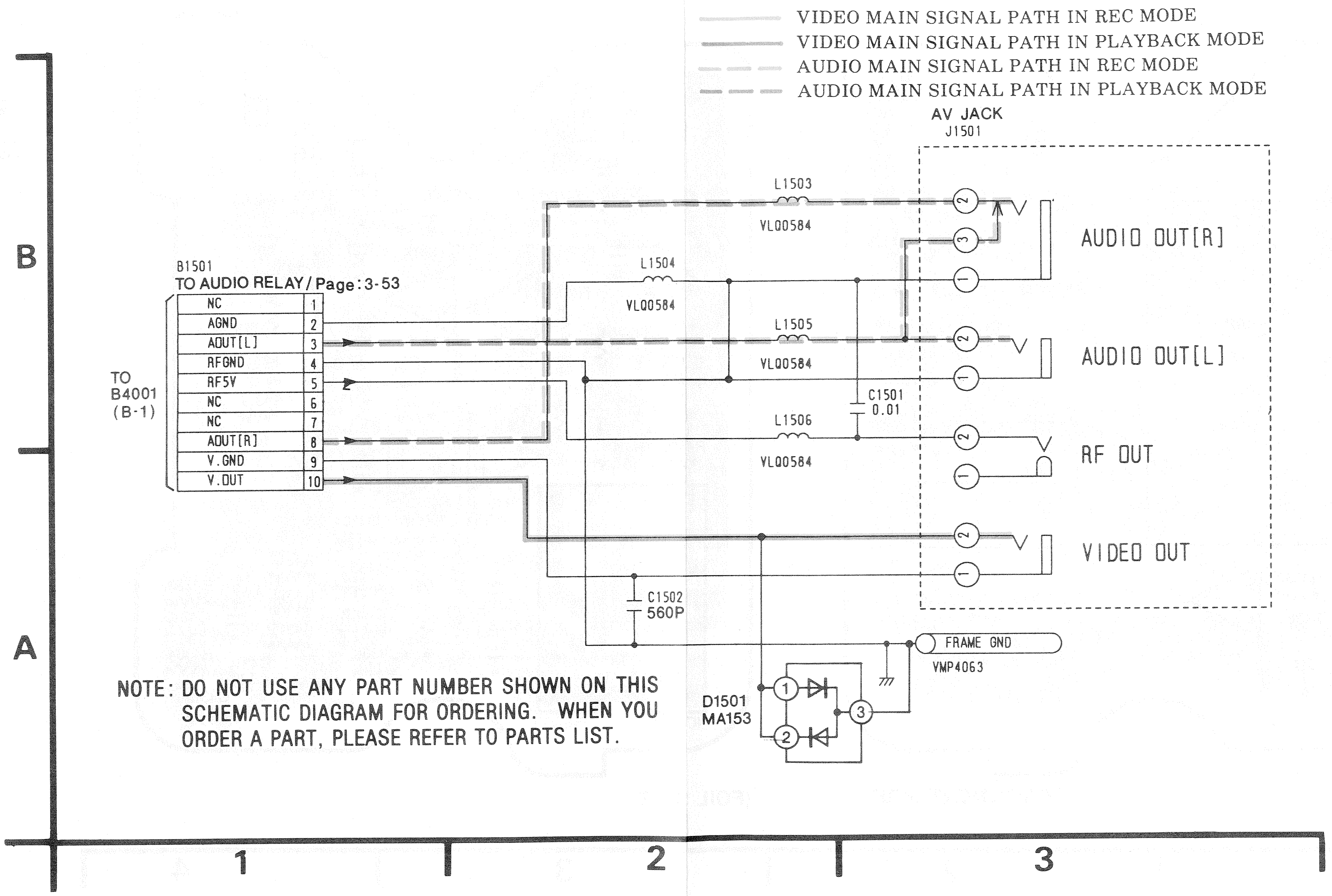
(COMPONENT SIDE)

(FOIL SIDE)

MIC C.B.A.	
Integrated Circuit	
IC4301	A-3
Transistor	
Q4301	A-1
Q4302	A-1
Q4303	B-3
Q4304	B-3
Q4305	B-3
Q4306	B-3
Connector	
P4301	A-2

ADDRESS INFORMATION

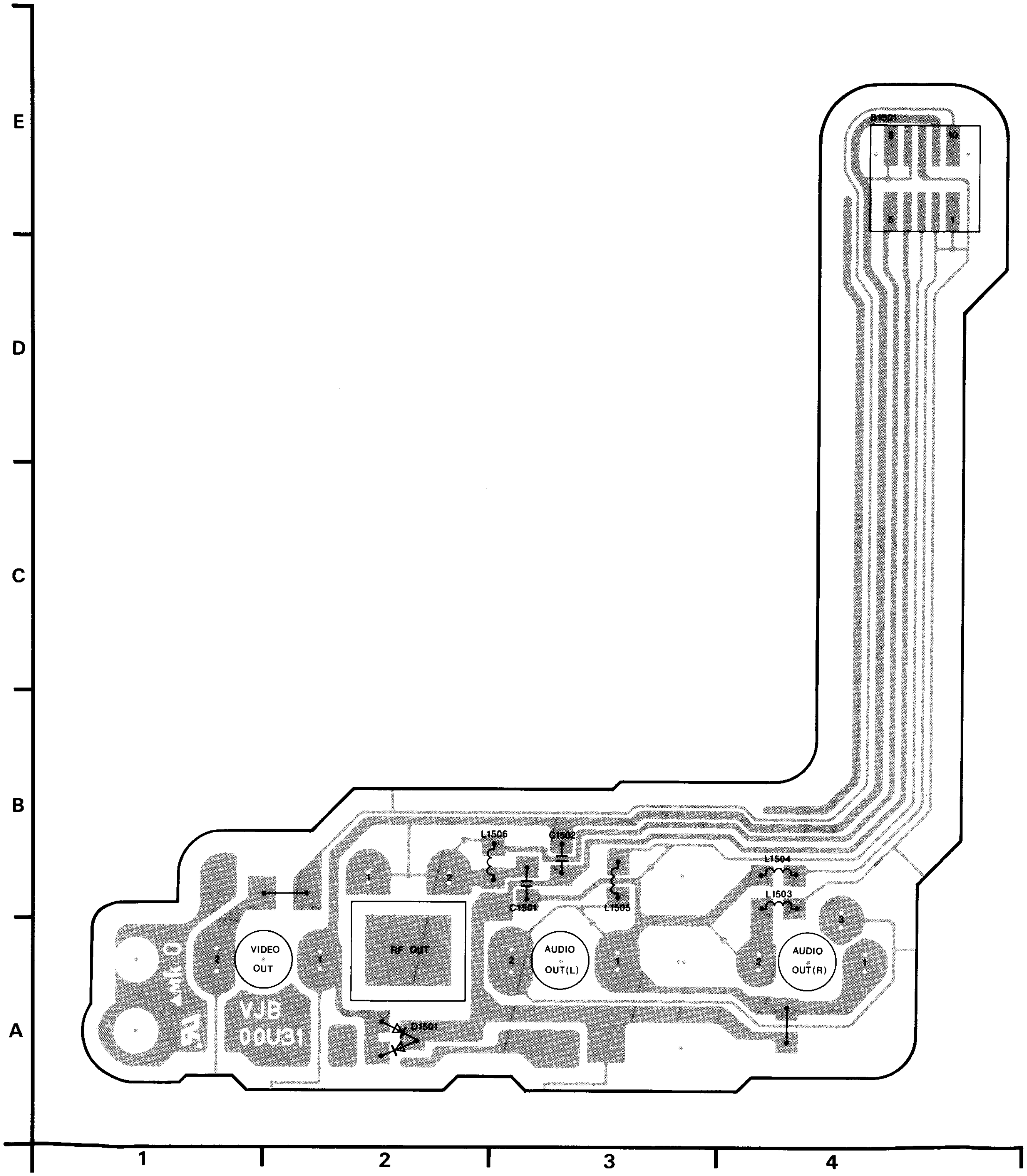
3-29. AV JACK SCHEMATIC DIAGRAM


VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
AV JACK
J1501
B
A
1
2
3
B1501
TO AUDIO RELAY / Page : 3-53
TO
B4001
(B-1)
NC 1
AGND 2
AOUT[L] 3
RFGND 4
RF5V 5
NC 6
NC 7
AOUT[R] 8
V.GND 9
V.OUT 10
L1503
VLQ0584
L1504
VLQ0584
L1505
VLQ0584
L1506
VLQ0584
C1501
0.01
C1502
560P
AUDIO OUT[R]
AUDIO OUT[L]
RF OUT
VIDEO OUT
FRAME GND
VMP4063
D1501
MA153

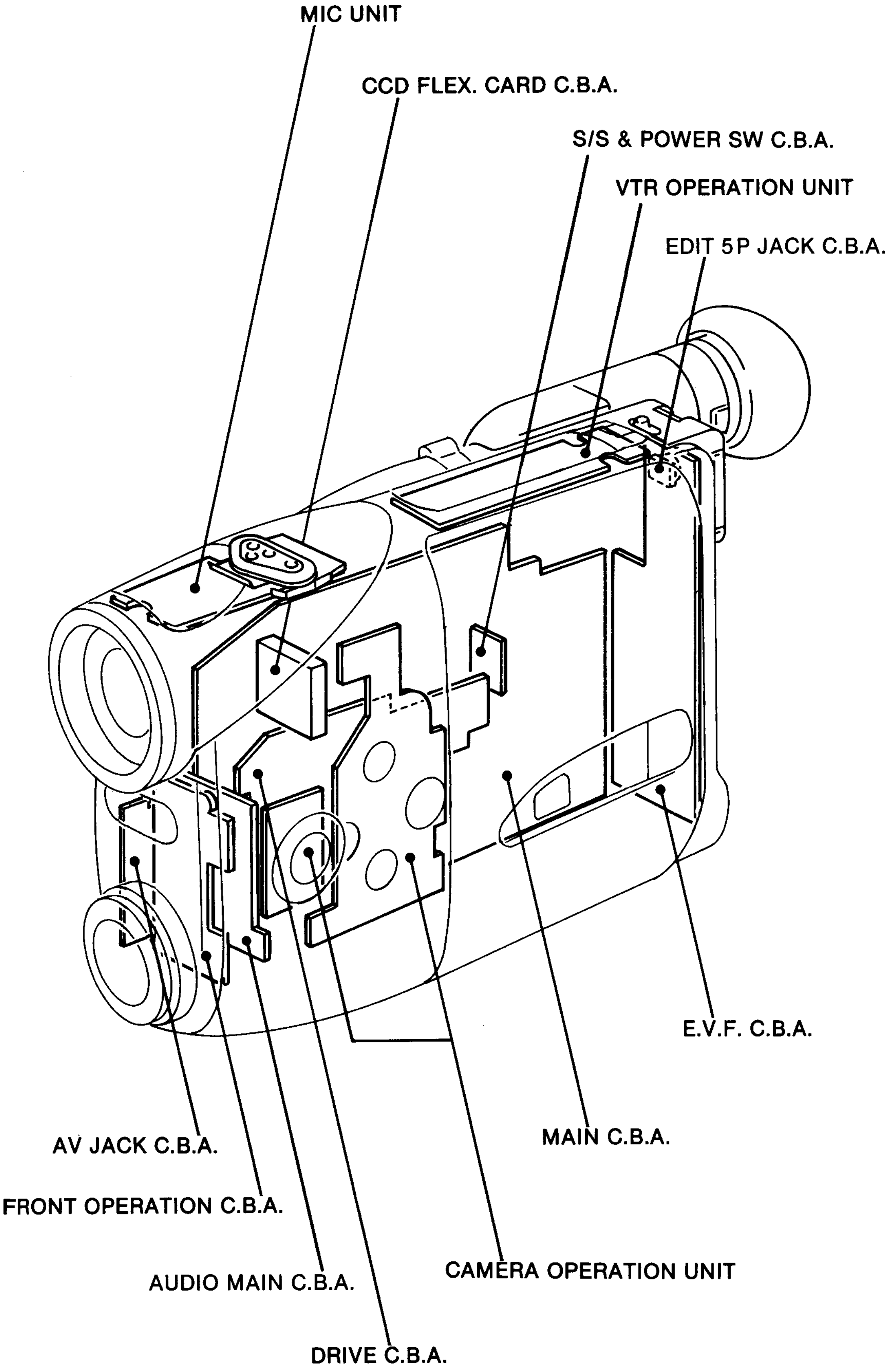
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
MIC Section

3-30. AV JACK C.B.A. (VEP00U31A)


E
D
C
B
A
1
2
3
4
B1501
6
10
5
1
L1506
C1502
C1501
L1505
L1504
L1503
VIDEO OUT
RF OUT
AUDIO OUT(L)
AUDIO OUT(R)
D1501
VJB 00U31
1
2
3

3-31. CIRCUIT BOARD LAYOUT

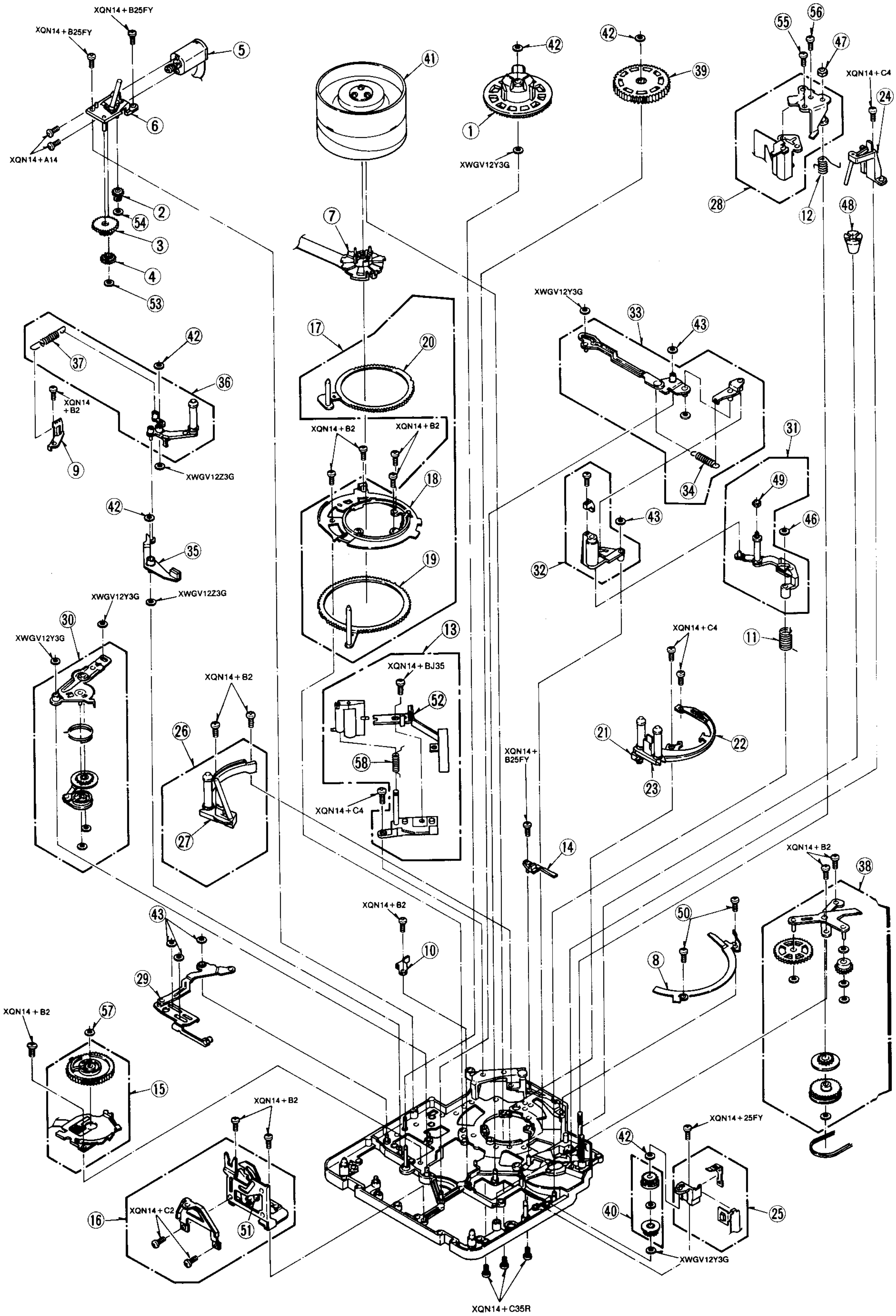

MIC UNIT
CCD FLEX. CARD C.B.A.
S/S & POWER SW C.B.A.
VTR OPERATION UNIT
EDIT 5P JACK C.B.A.
E.V.F. C.B.A.
MAIN C.B.A.
AV JACK C.B.A.
FRONT OPERATION C.B.A.
AUDIO MAIN C.B.A.
CAMERA OPERATION UNIT
DRIVE C.B.A.

Back Page:
AV JACK Section

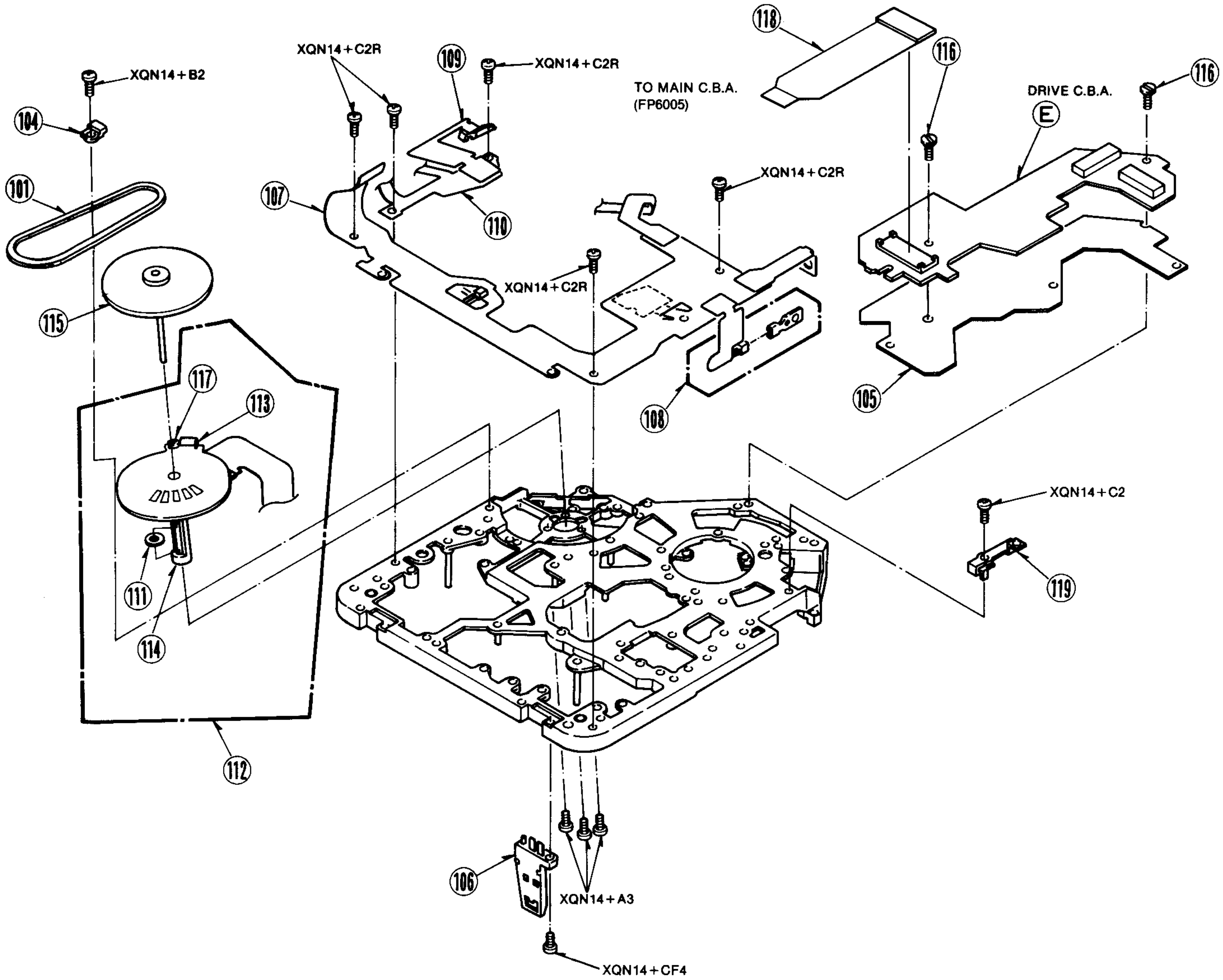
SECTION 4
EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEWS

❶ VTR MECHANISM SECTION (1)

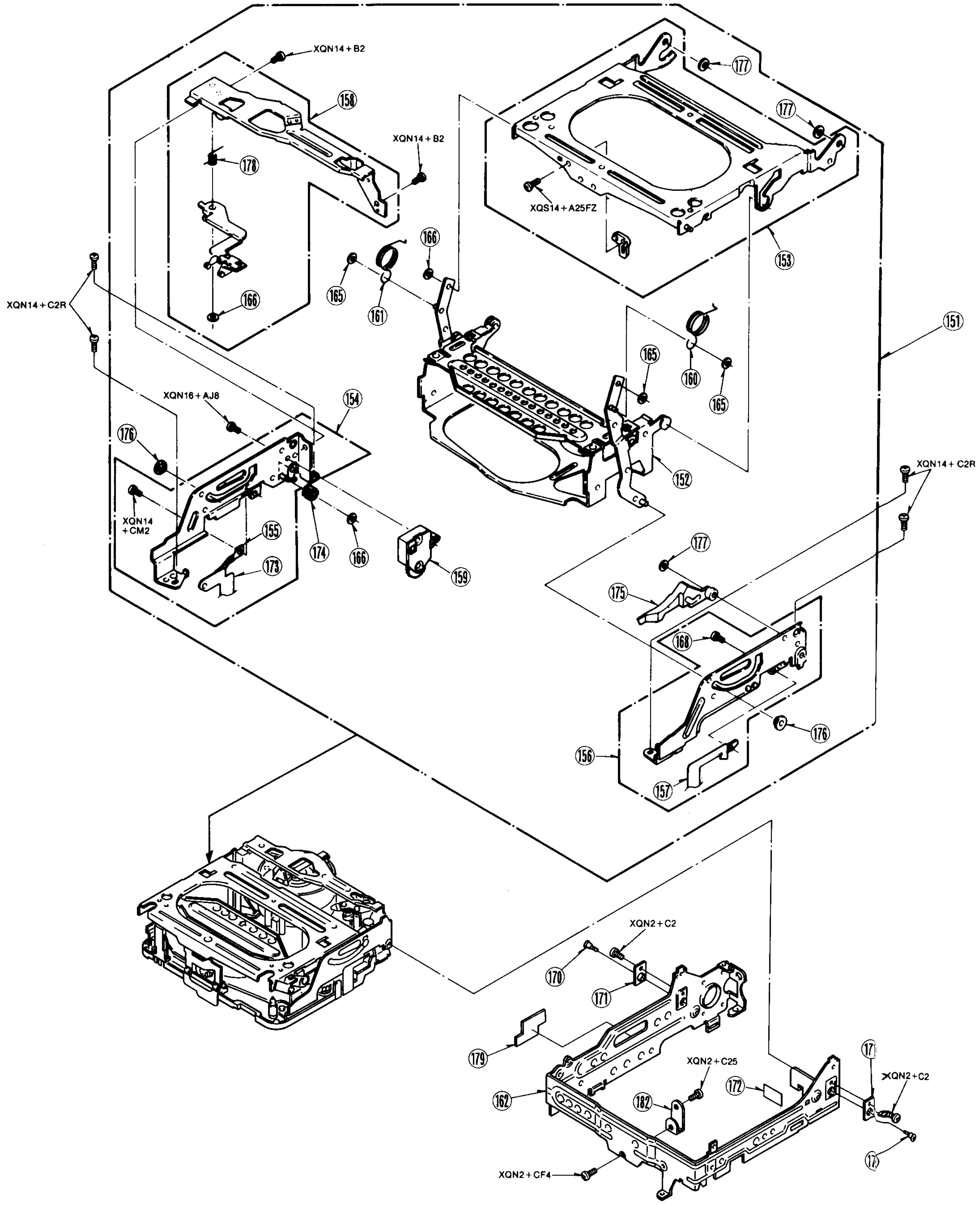

XQN14+B25FY
XQN14+B25FY
⑤
⑥
XQN14+A14
②
(54)
③
④
(53)
㊶
㊷
①
XWGV12Y3G
㊷
㊴
(55)
(56)
㊼
XQN14+C4
㉔
㉘
⑫
㊽
⑦
⑰
⑳
XQN14+B2
XQN14+B2
⑱
⑲
㊲
㊷
㊱
XQN14+B2
⑨
XWGV12Z3G
㊷
㉟
XWGV12Y3G
XWGV12Z3G
㉚
XWGV12Y3G
⑬
XQN14+BJ35
(52)
(58)
XQN14+C4
XQN14+B2
㉖
㉗
XWGV12Y3G
㉝
㊸
㉞
㉛
㊾
㊻
㊸
㉜
⑪
XQN14+C4
㉑
㉒
㉓
XQN14+B25FY
⑭
XQN14+B2
㊳
㊿
⑧
XQN14+B2
⑩
㊸
㉙
XQN14+B2
(57)
⑮
XQN14+B2
XQN14+C2
⑯
(51)
㊷
XQN14+25FY
㊵
㉕
XWGV12Y3G
XQN14+C35R

❷ VTR MECHANISM SECTION (2)



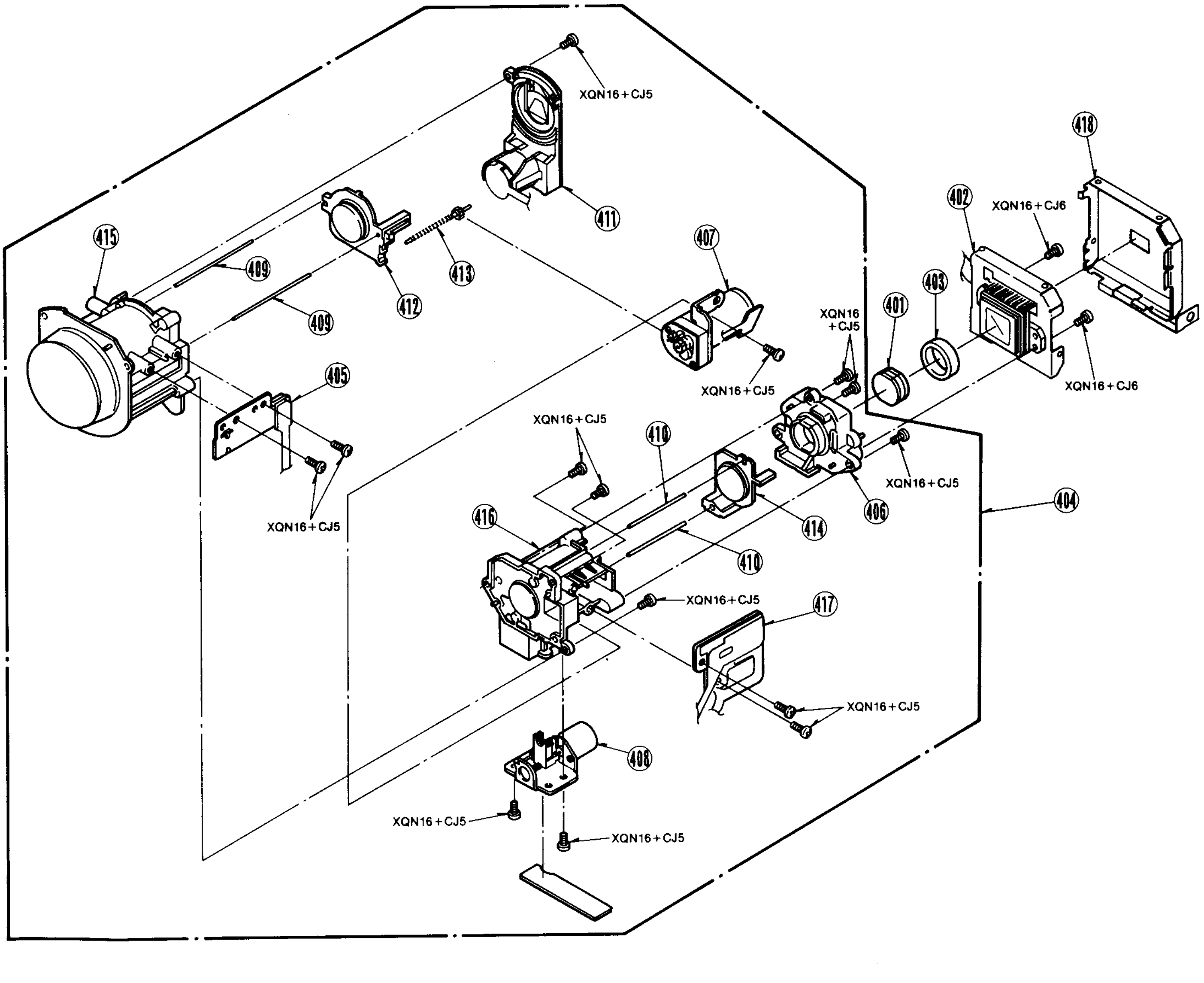
XQN14+B2
104
101
115
117
113
111
114
112
XQN14+C2R
109
XQN14+C2R
107
110
XQN14+C2R
XQN14+C2R
108
118
TO MAIN C.B.A.
(FP6005)
116
DRIVE C.B.A.
E
116
105
XQN14+C2
119
XQN14+A3
106
XQN14+CF4

❸ VTR MECHANISM SECTION (3)

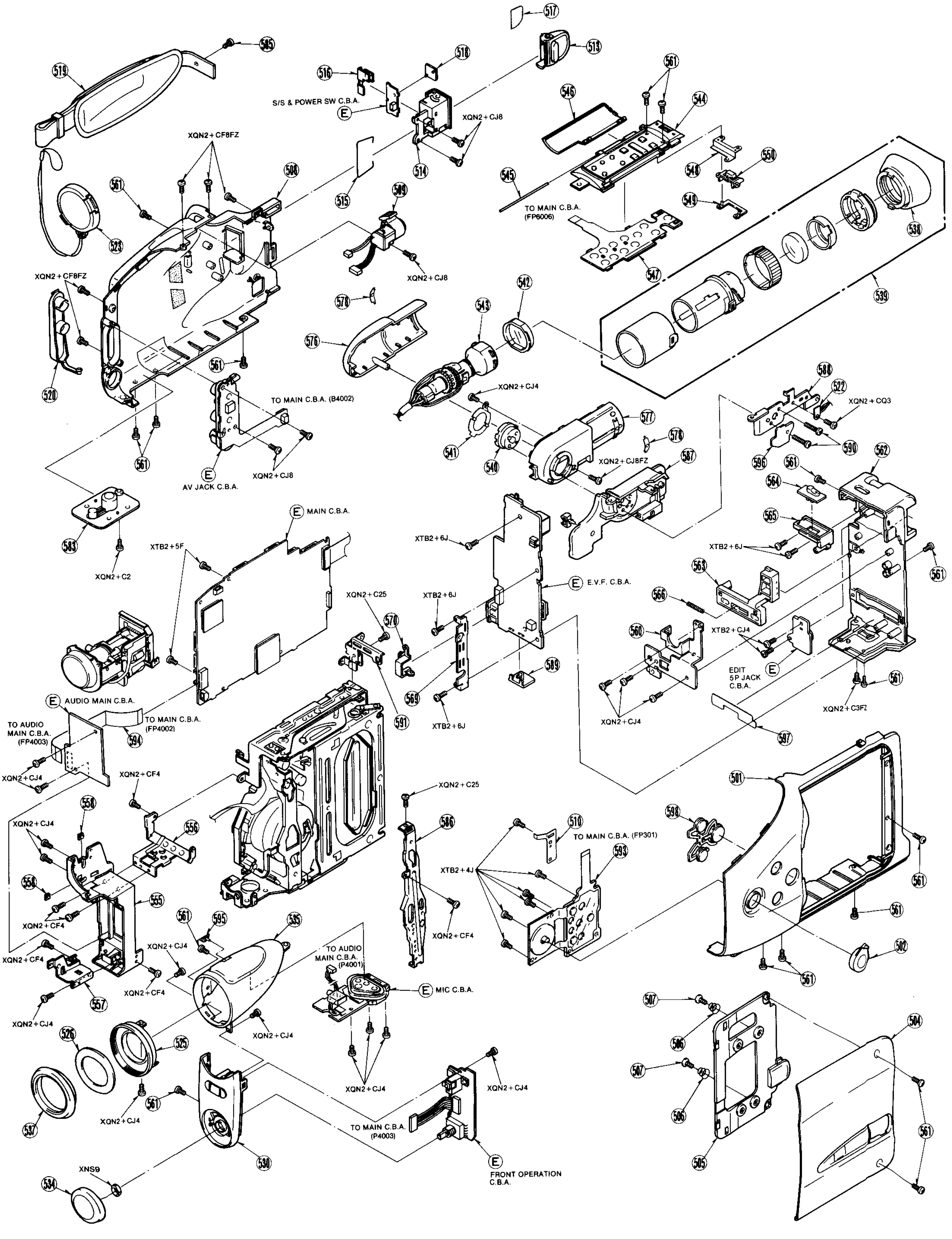


XQN14 + B2
158
178
166
XQN14 + B2
177
177
XQS14 + A25FZ
153
166
165
161
XQN14 + C2R
151
165
160
165
XQN16 + AJ8
154
176
152
XQN14 + C2R
XQN14
+ CM2
155
173
174
166
159
177
175
168
176
156
157
XQN2 + C2
170
171
179
XQN2 + C25
172
17
XQN2 + C2
162
182
17
XQN2 + CF4

❹ CAMERA LENS SECTION

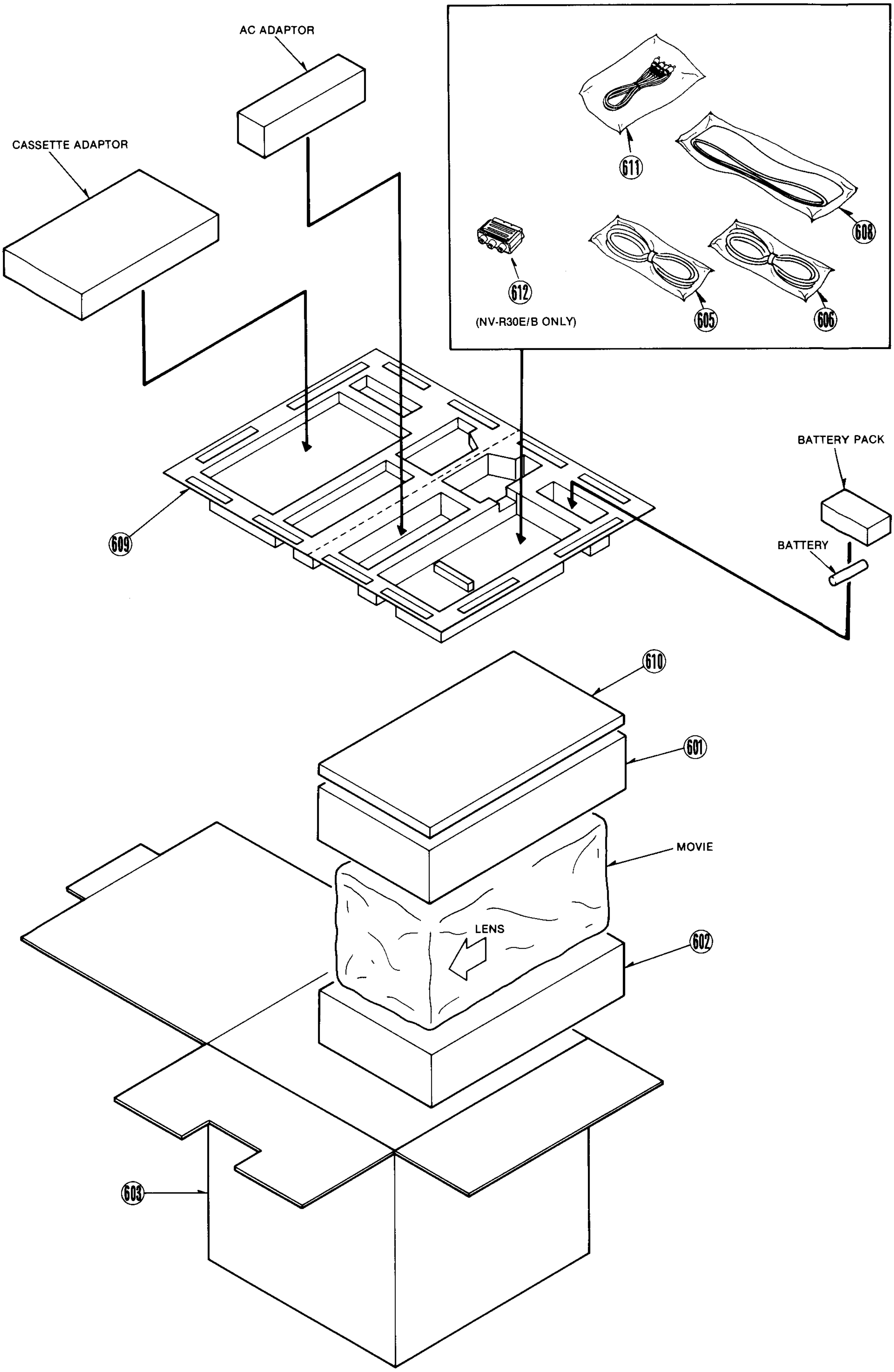

XQN16+CJ5
411
418
402
XQN16+CJ6
415
409
413
407
412
409
403
XQN16
+CJ5
401
XQN16+CJ6
405
XQN16+CJ5
XQN16+CJ5
410
XQN16+CJ5
404
406
414
XQN16+CJ5
416
410
XQN16+CJ5
417
XQN16+CJ5
408
XQN16+CJ5
XQN16+CJ5

❺ FRAME & CASING PARTS SECTION



517
585
513
519
516
518
561
S/S & POWER SW C.B.A.
546
544
XQN2+CJ8
XQN2+CF8FZ
508
514
548
550
561
515
545
509
TO MAIN C.B.A. (FP6006)
549
538
523
XQN2+CJ8
547
XQN2+CF8FZ
542
578
543
539
576
561
588
520
TO MAIN C.B.A. (B4002)
XQN2+CJ4
522
XQN2+CQ3
577
561
578
590
541
540
596
561
562
XQN2+CJ8FZ
587
AV JACK C.B.A.
XQN2+CJ8
564
MAIN C.B.A.
565
583
XTB2+6J
XTB2+6J
XTB2+5F
561
XQN2+C2
563
E.V.F. C.B.A.
XQN2+C25
XTB2+6J
566
570
560
TB2+CJ4
589
EDIT 5P JACK C.B.A.
561
569
XQN2+CJ4
XQN2+C3FZ
AUDIO MAIN C.B.A.
TO AUDIO MAIN C.B.A. (FP4003)
TO MAIN C.B.A. (FP4002)
594
591
XTB2+6J
597
XQN2+CJ4
501
XQN2+CF4
XQN2+C25
598
558
586
510
TO MAIN C.B.A. (FP301)
XQN2+CJ4
556
593
561
XTB2+4J
554
555
561
XQN2+CF4
561
595
535
XQN2+CF4
XQN2+CJ4
XQN2+CF4
TO AUDIO MAIN C.B.A. (P4001)
502
XQN2+CF4
557
MIC C.B.A.
561
XQN2+CJ4
507
XQN2+CJ4
504
506
526
525
507
XQN2+CJ4
XQN2+CJ4
506
561
561
537
XQN2+CJ4
TO MAIN C.B.A. (P4003)
530
505
XNS9
FRONT OPERATION C.B.A.
534

❻ PACKING PARTS & ACCESSORIES SECTION



AC ADAPTOR
CASSETTE ADAPTOR
611
608
612
(NV-R30E/B ONLY)
605
606
BATTERY PACK
BATTERY
609
610
601
MOVIE
LENS
602
603

4-2. MECHANICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VDR0226	REEL BASE (S)	1	
2(1)		VDG0821	BRAKE GEAR (A)	1	
3(1)		VDG0822	BRAKE GEAR (B)	1	
4(1)		VDG0823	BRAKE GEAR (C)	1	
5(1)		VEM0417	LOADING MOTOR (1) U.	1	
6(1)		VXA4527	MOTOR HOLDER U.	1	
7(1)		VEK7073	RT CONNECTOR U.	1	
8(1)		VMA8502	T-RING SLIDER	1	
9(1)		VMA8505	TEN-REG.SPRING HOOK	1	
10(1)		VMA8532	PENDULUM ARM HOLDER	1	
11(1)		VMB2362	T3 ARM SPRING	1	
12(1)		VMB2365	AC HEAD SPRING	1	
13(1)		VXA5108	S-GUIDE STAND U.	1	
14(1)		VMD1851	T-BOAT GUIDE	1	
15(1)		VSR0096	MODE SWITCH U.	1	
16(1)		VXA4515	LOCK BASE U.	1	
17(1)		VXA4517	LOADING RING U.	1	
18(1)		VMD1824	RING GUIDE	1	
19(1)		VXA4518	T-RING U.	1	
20(1)		VXA4519	S-RING U.	1	
21(1)		VEK5549	LED U.	1	
22(1)		VMD1828	T-RAIL	1	
23(1)		VXA4776	T-BOAT U.	1	
24(1)		VXA4528	T4 POST U.	1	
25(1)		VXA4997	T-REEL SENSOR U.	1	
26(1)		VXA4532	S-RAIL U.	1	
27(1)		VXA4525	S-BOAT U.	1	
28(1)		VXA5201	AC HEAD U.	1	
29(1)		VXL2130	EJECT LEVER U.	1	
30(1)		VXL2133	SWING ARM U.	1	
31(1)		VXL2135	T3 ARM U.	1	
32(1)		VXL2139	PINCH ARM U.	1	
33(1)		VXL2140	PINCH DRIVE ARM U.	1	
34(1)		VMB2363	PINCH PRESSURE SPRING	1	
35(1)		VXL2144	PAD ARM U.	1	
36(1)		VXL2145	TEN-REG. ARM U.	1	
37(1)		VMB2364	TEN-REG. SPRING	1	
38(1)		VXL2147	IDLER U.	1	
39(1)		VXP1308	RELAY GEAR U.	1	
40(1)		VXP1313	T-DRIVE GEAR U.	1	
41(1)		VEG1047	CYLINDER U.	1	NV-R30E
41(1)		VEG1046	CYLINDER U.	1	NV-R30B/A
42(1)		VMX2027	WASHER	5	
43(1)		VMX2026	WASHER	5	
46(1)		VMX2026	WASHER	1	
47(1)		VHN0047	NUT	1	
48(1)		VHN0175	ADJUST NUT	1	
49(1)		VHN0172	T3 POST NUT	1	
50(1)		VHD0711	SCREW	3	
51(1)		VMB2369	LOCK SPRING	1	
52(1)		VXS0120	EARTH BRUSH U.	1	
53(1)		VMX2027	WASHER	1	
54(1)		VMX2051	WASHER	1	
55(1)		VHD0700	SCREW	1	
56(1)		VHD0699	SCREW	1	
57(1)		VMX2026	WASHER	1	
58(1)		VMB2661	S-GUIDE SPRING	1	
101(2)		VDV0232	CAPSTAN BELT	1	
104(2)		VMD1846	CAPSTAN STOPPER	1	
105(2)		VMZ1871	BARRIER	1	
106(2)		VSH0055	REC SAFETY SW U.	1	
107(2)		VWJ0719	MECH.FLEXIBLE CARD	1	
108(2)		VXA4511	PHOTO (L) U.	1	
109(2)		VXA4514	PHOTO (R) U.	1	
110(2)		VXA4997	T-REEL SENSOR U.	1	
111(2)		VDB1129	LOWER BEARING	1	
112(2)		VEK5516	STATOR U.	1	
113(2)		VBK0059	MR HEAD	1	
114(2)		VXD0134	HOUSING U.	1	
115(2)		VXP1303	ROTOR U.	1	
116(2)		VHD0681	SCREW	2	
117(2)		VHD0593	SCREW	1	
118(2)		VJB02431	DRIVE FLEX.CARD	1	
119(2)		VMP4011	H.A. EARTH PLATE	1	
151(3)		VXA5198	GARAGE U.	1	
152(3)		VXA5199	HOLDER U.	1	
153(3)		VXA4863	GARAGE (1) U.	1	
154(3)		VXA4510	STAND (L) U.	1	
155(3)		VXA4511	PHOTO (L) U.	1	
156(3)		VXA4513	STAND (R) U.	1	
157(3)		VXA4514	PHOTO (R) U.	1	
158(3)		VXL2222	TAPE GUIDE U.	1	
159(3)		VXP1472	DUMPER	1	
160(3)		VMB2367	UP SPRING (R)	1	
161(3)		VMB2368	UP SPRING (L)	1	
162(3)		VMP4070	VTR FRAME (A)	1	
165(3)		VMX1042	WASHER	3	
166(3)		VMX1061	WASHER	3	
168(3)		VHD0776	SCREW	1	
169(3)		VHD0729	SCREW	1	
170(3)		VHD0713	SCREW	2	
171(3)		VGQ3137	INSULATION PIECE (A)	2	
172(3)		VGQ3353	FRAME BARRIER	1	
173(3)		VWJ0548	PHOTO FLEX.CARD	1	
174(3)		VDG0827	DUMPER RELAY GEAR	1	
175(3)		VML2580	TAPE OPEN LEVER	1	
176(3)		VDP1406	ARM HOLDER	2	
177(3)		VMX1042	WASHER	3	
178(3)		VMB2498	TAPE GUIDE SPRING	1	
179(3)		VGQ3327	FRAME SPACER	1	
182(3)		VGQ3444	INSULATION PIECE	1	
401(4)		VDL0414	CRYSTAL FILTER	1	
402(4)		VEK7107	CCD UNIT	1	
403(4)		VMX2239	CCD CUSHION	1	
404(4)		VXW0150	LENS U.	1	
405(4)		EVAWMBJ02B14	ZOOM ENCODER U.	1	
406(4)		VDW0224	CRYSTAL MOUNT PLATE	1	
407(4)		VEM0450	ZOOM MOTOR U.	1	
408(4)		VEM0451	FOCUS MOTOR U.	1	
409(4)		VMS5384	Z GUIDE POLE	2	
410(4)		VMS5385	F GUIDE POLE	2	
411(4)		VXL2369	IRIS U.	1	
412(4)		VXP1412	2ND. MOVING FRAME U.	1	
413(4)		VXP1413	SCREW SHAFT U.	1	
414(4)		VXP1414	4TH. MOVING FRAME U.	1	
415(4)		VXQ0356	MAIN FRAME U.	1	
416(4)		VXQ0357	3RD. MOVING FRAME U.	1	
417(4)		VEK6690	LENS FLEX. U.	1	
418(4)		VSC3849	CCD SHIELD CASE	1	
501(5)		VYK5633	SIDE CASE (R)(1) U.	1	
502(5)		VXU1184	MODE SELECT LEVER U.	1	
504(5)		VYK5616	CASSETTE COVER (1) U.	1	
505(5)		VGU6312	CASSETTE LOCK BUTTON	1	
506(5)		VMB2604	CASSETTE COIL SPRING	2	
507(5)		VHD0794	SCREW	2	
508(5)		VYK5635	SIDE CASE (L)(1)U.	1	
509(5)		VXU1192	ZOOM BUTTON U.	1	
510(5)		VMC0969	CASSETTE HOLD SPRING	1	
513(5)		VXU1162	S/S BUTTON (1) U.	1	
514(5)		VGQ3404	S/S BUTTON HOLDER	1	
515(5)		VMB2594	S/S BUTTON COVER SPRING	1	
516(5)		VGQ3201	S/S BUTTON SPACER	1	
517(5)		VGQ3214	S/S BUTTON SHEET	1	
518(5)		VMG0763	RUBBER SW	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
519(5)		VYC0598	GRIP BELT U.	1	
520(5)		VKF2009	AV JACK COVER	1	
522(5)		VEK7029	DEW SENSOR	1	
523(5)		VYK5133	HOOD CAP HINGE U.	1	
525(5)		VDW0241	LENS PIECE	1	
526(5)		VGH3242	LENS NAME PLATE	1	
530(5)		VYK5637	FRONT CASE (1) U.	1	
534(5)		VGU6493	FOCUS KNOB	1	
535(5)		VYK5619	LENS COVER (1) U.	1	
537(5)		VDW0258	LENS HOOD	1	
538(5)		VMG0631	EYE CAP	1	
539(5)		VYK5641	SLIDE CASE U.	1	
540(5)		VGQ3122	ROTARY PIECE	1	
541(5)		VMC0977	ROTATION LOCK SPRING	1	
542(5)		VKW1806	PROTECTION PANEL	1	
543(5)		M01KUA07WB02	CRT U.	1	
544(5)		VXU1236	TOP OPERATION PANEL (1) U.	1	NV-R30E
544(5)		VXU1216	TOP OPERATION PANEL (1) U.	1	NV-R30B/A
545(5)		VMS5382	SHAFT	1	
546(5)		VKF2154	TOP DOOR	1	
547(5)		ESU39009	PANEL SW	1	
548(5)		VSC3918	EARTH ANGLE	1	
549(5)		VGL0563	PANEL LIGHT	1	
550(5)		VGU6562	CAM/VTR SELECT BUTTON	1	
555(5)		VMD2203	LENS FRAME	1	
556(5)		VMP4072	SUPPORT ANGLE	1	
557(5)		VMP4284	FRONT ANGLE	1	
558(5)		VHN0057	CASE FIX. ANGLE	2	
560(5)		VMP4239	REAR CASE FIX. ANGLE	1	
561(5)		VHD0729	SCREW	15	
562(5)		VKM3737	REAR CASE	1	
563(5)		VGQ3456	BATTERY LOCK	1	
564(5)		VGU6494	EJECT KNOB	1	
565(5)		VGQ3381	EJECT KNOB HOLDER	1	
566(5)		VMB2683	BATTERY LOCK SPRING	1	
569(5)		VMP4062	CASE (R) FIX. ANGLE	1	
570(5)		VMP4075	DC JACK HOLD ANGLE	1	
576(5)		VKM3745	EVF CASE (L)	1	
577(5)		VKM3744	EVF CASE (R)	1	
578(5)		VMC0978	SLIDE SPRING	2	
583(5)		VYQ0998	TRIPOD FRAME	1	
585(5)		VHD0794	SCREW	1	
586(5)		VMP4286	VTR FRAME (B)	1	
587(5)		VGQ3451	EVF FIXING PIECE	1	
588(5)		VMP4238	EVF FIXING PLATE	1	
589(5)		VGU6495	POWER SAVE KNOB	1	
590(5)		VHD0689	SCREW	2	
591(5)		VMP4237	VTR FRAME (C)	1	
593(5)		VEK6638	CAMERA OPERATION UNIT	1	
594(5)		VWJ0817	AUDIO FLEX. CARD	1	
595(5)		VKF2153	MIC CAP	1	
596(5)		VMZ2275	EVF FIXING PLATE BARRIER	1	
597(5)		VMZ2179	REAR SHEET	1	
598(5)		VGU6542	CAMERA OPERATION BUTTON	1	
601(6)		VPN3811	CUSHION (UPPER)	1	
602(6)		VPN3812	CUSHION (LOWER)	1	
603(6)		VPG7361	PACKING	1	NV-R30E
603(6)		VPG7362	PACKING	1	NV-R30B
603(6)		VPG7377	PACKING	1	NV-R30A
605(6)		VJA0664	AC CORD	1	<!>NV-R30E
605(6)		VJA0754	AC CORD	1	<!>NV-R30A
605(6)		VJA0733	AC CORD	1	<!>NV-R30B
606(6)		VJA0769	DC OUTPUT CABLE	1	
608(6)		VFC1620	SHOLDER STRAP	1	
609(6)		VPN3619	ACCESSORIES BOX	1	
610(6)		VQT5579	OPERATING INSTRUCTIONS	1	<!>NV-R30E
			(ENGLISH/GERMAN/FRENCH/		
			SPANISH)		
610(6)		VQT5580	OPERATING INSTRUCTIONS	1	<!>NV-R30E
			(ITALIAN/DUTCH/SWEDISH/		
			DANISH)		
610(6)		VQT5581	OPERATING INSTRUCTIONS	1	<!>NV-R30B
			(ENGLISH)		
610(6)		VQT5586	OPERATING INSTRUCTIONS	1	<!>NV-R30A
			(ENGLISH)		
611(6)		VJA0788	AV CORD	1	
612(6)		VFA0151	21 PIN ADAPTOR	1	NV-R30E/B
			****** JIG & TOOLS *****		
			-------- ELECTRICAL -------		
		VFM8180HUPF	VHS-C ALIGMENT TAPE	1	PAL
		VFK0374	COLOUR TEMP.CONV.FILRTER	1	(C12) OR VFK0713
		VEK0375	COLOUR TEMP.CONV.FILRTER	1	(C2) OR VFK0716
		VFK0644	EVR FIXTURE	1	
		VFK0701ROM23	ROM	1	
		VFK0766A	EVR CONNECTION CABLE 5P	1	
		VFK0734W	MEASURENT CABLE 24P	1	
		VFK0727	FLAT CABLE 16P	1	
		VFK0728	FLAT CABLE 9P	1	
		VFK0729	FLAT CABLE 6P	1	
		VFK0929	EXTENSION CABLE 12P	1	
		VFK0839	EXTENSION CABLE 30P	1	
		VFK0949	FLAT CABLE 22P	1	
		VFK0913	FLAT CABLE 18P	1	
			------ MECHANICAL ------		
		VFK0743	H-POSITION ADJUSTMENT	1	
		VFK0824	ASTERISK TYPE RENCH	1	
		VFK0335	RETAINING RING REMOVER	1	
		VFK0329	POST ADJ. SCREW DRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLTONE GREASE	1	

4-3. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE : Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP23202B	CAMERA MAIN C.B.A.	1	(RTL)
					NV-R30E ONLY
		VEP23202A	CAMERA MAIN C.B.A.	1	(RTL)
					NV-R30B/A ONLY
		VEP04452B	Hi-Fi AUDIO PACK C.B.A.	1	(RTL)
					NV-R30E ONLY
		VEP04452A	Hi-Fi AUDIO PACK C.B.A.	1	(RTL)
					NV-R30B/A ONLY
		VEP02418A	DRIVE C.B.A.	1	(RTL)
		VEP28087A	EVF C.B.A.	1	(RTL)
		VEP22132B	CCD FLEX. CARD C.B.A.	1	(RTL)
		VEK6690	LENS FLEX. CARD C.B.A.	1	(RTL)
		VEK6715	MIC UNIT	1	(RTL)
		VEP00T97B	FRONT OPERATION C.B.A.	1	(RTL)
		VEP00U31A	AV JACK C.B.A.	1	(RTL)
		VEP00T11C	S/S C.B.A.	1	(RTL)
		VEK6711	EDIT 5P JACK C.B.A.	1	(RTL)
	■	VEP23202B	CAMERA MAIN C.B.A.		(RTL)
	■	(VEP23202A)	(CAMERA MAIN C.B.A.)		VEP23202B
					NV-R30E ONLY,
					VEP23202A
					NV-R30B/A ONLY
B201		VJP3359D012	CONNECTOR (MALE) 12P	1	
B302		VJP2962A024	CONNECTOR (MALE) 24P	1	
B1001		VJS2961C030	CONNECTOR (FEMALE) 30P	1	
B4001		VJP3295D010	CONNECTOR (MALE) 10P	1	
B6004		VJP3358C016	CONNECTOR (MALE) 16P	1	
C201		ECRJA010A11	V.CAPACITOR	1	
C202		ECUX1H060CCV	C.CAPACITOR CH 50V 6P	1	
C203		ECUX1H040CCV	C.CAPACITOR CH 50V 4P	1	
C205		ECUX1H100CCV	C.CAPACITOR 50V 10P	1	
C207		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C210		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C211-13		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	3	
C215		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C216		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C225		ECST1GX155Z	T.CAPACITOR 40V 1.5U	1	
C233		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C234		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C236		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C237		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C238		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C239		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C240		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C241-44		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C245		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C246		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C247		ECUX1H473ZFV	C.CAPACITOR CH 50V 0.047U	1	
C249		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C250		ECST0GY226Z	T.CAPACITOR 4V 22U	1	
C251		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C252,53		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C254		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C255		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C256		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C257		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C258		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C262		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C265,66		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C267		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C269		ECST1DX475Z	T.CAPACITOR 20V 4.7U	1	
C270		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C271		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C272		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C273,74		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C275,76		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C280		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C301		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C302,03		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C304		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C305		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C307		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C308		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C310		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C312		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C313		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C314		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C315-17		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C318-20		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	3	
C322,23		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C324		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C326		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C329		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C330		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C331,32		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C333		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C334,35		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C338		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C343,44		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C345,46		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C347		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C348		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C350		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C351		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C352		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C353		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C360		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C361		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C370		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C701		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C702		ECUX1H473ZFV	C.CAPACITOR CH 50V 0.047U	1	
C703		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C710		ECUX1H473ZFV	C.CAPACITOR CH 50V 0.047U	1	
C711		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C716		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C719		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C720		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C721		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C722		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C724,25		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C729		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C730		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C731		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C8001		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C8002		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C8003		ECST0JY475Z	T.CAPACITOR 6.3V 4.7U	1	
C8004		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C8005		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8007,08		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C8010		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C8011		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C8012		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C8013		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C8014		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8015		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C8020		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8021		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8022		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C8023		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C8024		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C8025		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C8026		ECUX1H060CCV	C.CAPACITOR CH 50V 6P	1	
C8027		ECUX1H100CCV	C.CAPACITOR 50V 10P	1	
C8030		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8031		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8032		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C8033		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C8034-37		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	4	
C8038,39		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C8041		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8042		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
D203		MA728	DIODE	1	
D206-09		MA110	DIODE	4	
D301		MA728	DIODE	1	
D303,04		MA728	DIODE	2	
D305		MA110	DIODE	1	
D306		MA728	DIODE	1	
D703		MA132WA	DIODE	1	
D1002		SFPB-76	DIODE	1	
D1004		EC10QS04	DIODE	1	
D1005		SB05-05CP	DIODE	1	
D1006,07		MA132K	DIODE	2	
D1008		MA728	DIODE	1	
D1012		MA133	DIODE	1	
D1015		MA738	DIODE	1	
D1062		SB05-05CP	DIODE	1	
D1064		MA728	DIODE	1	
D5001,02		MA132WA	DIODE	2	
D5003		MA110	DIODE	1	
D6008		MA110	DIODE	1	
D6011		MA132WK	DIODE	1	
D6012		MA132WA	DIODE	1	
D6013		MA132A	DIODE	1	
D6015		MA728	DIODE	1	
D6016		MA133	DIODE	1	
D6018		MA728	DIODE	1	
D6300		MA132K	DIODE	1	
D6301		MA133	DIODE	1	
D6303		BR1102W	DIODE	1	
D8002		MA110	DIODE	1	
FL201		ELB3H009	FILTER	1	
FP301		VJS2907D007	CONNECTOR (FEMALE)	1	
FP701		VJS3319D018	CONNECTOR (FEMALE) 18P	1	
FP4001		VJS2958D009	CONNECTOR (FEMALE) 9P	1	
FP4002		VJS3319D021	CONNECTOR (FEMALE) 21P	1	
FP5001		VJS2959B023	CONNECTOR (FEMALE) 23P	1	
FP6001		VJS2959B016	CONNECTOR (FEMALE) 16P	1	
FP6002		VJS2959B006	CONNECTOR (FEMALE) 6P	1	
FP6005		VJS3442D023	CONNECTOR (FEMALE) 23P	1	
FP6006		VJS2959D011	CONNECTOR (FEMALE) 11P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC201		VEFH39A	IC	1	
IC203		AN2018S	IC	1	
IC204		AN2033FAP	IC	1	
IC206		SC7S08F	IC	1	
IC207		TC7SU04F	IC	1	
IC208		SC7S04F	IC	1	
IC302		MN673221	IC	1	
IC303		MN65702H	IC	1	
IC304		TC9074F	IC	1	
IC305		MN1864002M2B	IC	1	
IC306		MN73512XWAS	IC	1	
IC307,08		M62353GP	IC	2	
IC309		X25040S-3C70	IC	1	
IC705-07		LM324DB	IC	3	
IC708		TB6512AF	IC	1	
IC1001		BA9706K	IC	1	
IC3001		VEFH32E	IC	1	
IC3002		TC7W04F	IC	1	
IC5001		AN3352FHP	IC	1	
IC6001		MN6755324M2H	IC	1	
IC6002		S3500B3	IC	1	
IC6003		HJ6462	IC	1	
IC6004		SC4S66F	IC	1	
IC6005		BA6289F	IC	1	
IC6006		TA75W393FU	IC	1	
IC6007		RH5RE38AA	IC	1	
IC6008		PST9133NR	IC	1	
IC6009		TC4S30F	IC	1	
IC6011,12		SC4S66F	IC	2	
IC8001		LC89970MDTER	IC	1	
L203,04		VLQ0426J150	COIL 15UH	2	
L206		VLQ0426J150	COIL 15UH	1	
L207		VLQ0426J3R3	COIL	1	
L209		VLQ0426J680	COIL 68UH	1	
L210		VLQ0426J150	COIL 15UH	1	
L211		VLQ0426J820	COIL 82UH	1	
L212		VLQ0426J150	COIL 15UH	1	
L215		VLP0154	COIL H	1	
L220,21		VLP0146	COIL H	2	
L222		VLP0140	COIL	1	
L230,31		VLP0154	COIL H	2	
L301		VLQ0464	COIL	1	
L302		VLP0140	COIL	1	
L303-05		VLQ0464	COIL	3	
L308		VLQ0464	COIL	1	
L309		VLP0140	COIL	1	
L310		VLQ0464	COIL	1	
L311		VLP0140	COIL	1	
L312		VLQ0426J220	COIL 22UH	1	
L313-18		VLQ0464	COIL	6	
L319		VLP0140	COIL	1	
L321		VLQ0464	COIL	1	
L325		VLQ0426J390	COIL 39UH	1	
L701		VLQ0464	COIL	1	
L703		VLQ0464	COIL	1	
L706,07		VLQ0464	COIL	2	
L1001		VLQ0615	COIL H	1	
L1002		VLQ0617	COIL H	1	
L1003		VLQ0616	COIL H	1	
L1006		VLQ0319K470	COIL 47UH	1	
L1007		VLQ0618	COIL H	1	
L1008		VLQ0616	COIL H	1	
L1009		VLQ0319K100	COIL 10UH	1	
L1010,11		VLQ0319K101	COIL 100UH	2	
L1012		VLQ0319K100	COIL 10UH	1	
L1014		VLQ0319K100	COIL 10UH	1	
L1015		VLQ0319F150	COIL 15UH	1	
L1062		VLQ0619	COIL H	1	
L3001		VLQ0426J560	COIL 56UH	1	
L3002		VLQ0319K101	COIL 100UH	1	
L3003		VLQ0163J820	COIL 82UH	1	
L3005		VLQ0319K121	COIL 120UH	1	
L3006		VLQ0163J121	COIL 120UH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C732		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C737		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C738		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C739		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C779		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1001		ECUM1C335ZFM	C.CAPACITOR CH 16V 3.3U	1	
C1002		ECGC1BA4R7	CAPACITOR	1	
C1003		ECGC0KB8R2	C.CAPACITOR 8V 8.2U	1	
C1004		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C1005		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	1	
C1006		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C1007		ECEV05A470	E.CAPACITOR 4V 47U	1	
C1008		ECGC0KB8R2	C.CAPACITOR 8V 8.2U	1	
C1009		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C1010		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	1	
C1011		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C1012		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C1013		ECGC1BA4R7	CAPACITOR	1	
C1014		ECUX1H561JCV	C.CAPACITOR CH 50V 560P	1	
C1015		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C1017		ECUM1E105ZFM	C.CAPACITOR CH 25V 1U	1	
C1019		ECUM1E474ZFM	C.CAPACITOR CH 25V 0.47U	1	
C1020		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C1022		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C1024		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
C1025		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1026		ECEV1HA010	E.CAPACITOR 50V 1U	1	
C1027		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C1028		ECEV1HAR47	E.CAPACITOR 50V 0.47U	1	
C1029		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C1030		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1031		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C1032		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1033-35		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C1036		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C1037		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1040,41		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C1042		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	1	
C1043		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C1051		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
C1056		ECEV0GA330	E.CAPACITOR 4V 33U	1	
C1057		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	1	
C1058		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C1063		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1064		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C1066		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C3001		ECEV0GA470	E.CAPACITOR 4V 47U	1	
C3002		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C3003		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3005		ECUM1E393KBN	C.CAPACITOR CH 25V 0.039U	1	
C3006		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3007		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3008		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C3011		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3012		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3015		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3022		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3023		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3024		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3027		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C3028		ECEV0GA471	E.CAPACITOR 4V 470U	1	
C3030		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C3031		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3032		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3033		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3035		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3037		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3040		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3041		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3042		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3043		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C4012		ECEV1HA2R2	E.CAPACITOR 50V 2.2U	1	
C4013,14		ECEV05A470	E.CAPACITOR 4V 47U	2	
C4015		ECUM1C223KBV	C.CAPACITOR CH 16V 0.022U	1	
C4016		ECUX1H682KBV	C.CAPACITOR CH 50V 6800P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4017		ECUM2A472JCM	C.CAPACITOR 100V 4700P	1	
C4018		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4601-03		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C4607		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C5001		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5002,03		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C5004		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5009		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5010		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5011		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5012		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5013		ECUM1H273KBN	C.CAPACITOR CH 50V 0.027U	1	
C5014		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	1	
C5015		ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
C5016		ECUM1H273KBN	C.CAPACITOR CH 50V 0.027U	1	
C5017-29		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	13	
C5030		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C5031		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5032,33		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C5034		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5035		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5036,37		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C5038,39		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C5040-42		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	3	
C5044		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C5046,47		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C5048		ECUM1C683KBN	C.CAPACITOR 16V 0.68U	1	
C5051		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C5052		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C5053		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C5054		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C5055		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C5056		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5058		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5059,60		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C5062		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C5063		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C5085		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5086		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C5100		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C5101		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C6001-04		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C6005		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C6006,07		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	2	
C6008		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6011		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6012,13		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C6014,15		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C6017		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C6018		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C6022,23		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	2	
C6024,25		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C6027		ECEV0GA101	E.CAPACITOR 4V 100U	1	
C6030		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C6031		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6038		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6040		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6041		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C6042		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C6060		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C6062		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C6100		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C6201		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6203		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C6204,05		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	2	
C6206		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6207,08		ECEV1CA100	E.CAPACITOR 16V 10U	2	
C6209		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6210		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6211		ECUX1H223ZFV	C.CAPACITOR CH 50V 0.022U	1	
C6213		ECEV05A470	E.CAPACITOR 4V 47U	1	
C6214		ECUX1H561JCV	C.CAPACITOR CH 50V 560P	1	
C6221		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6230		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C6231		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L3011		VLQ0426J330	COIL 33UH	1	
L3012		VLQ0426J150	COIL 15UH	1	
L3013		VLQ0163J151	COIL 150UH	1	
L3014		VLQ0163J220	COIL 22UH	1	
L3015		VLQ0319K101	COIL 100UH	1	
L3016		VLQ0426J470	COIL 47UH	1	
L3021		VLQ0319K101	COIL 100UH	1	
L3022		VLQ0426J330	COIL 33UH	1	
L4001		VLQ0319K470	COIL 47UH	1	
L5001-04		VLQ0319K101	COIL 100UH	4	
L5006		VLQ0401K120	COIL 12UH	1	
L5007,08		VLQ0319K101	COIL 100UH	2	
L5010		VLQ0319K101	COIL 100UH	1	
L6001		VLQ0163J330	COIL 33UH	1	
L6002		VLQ0319K101	COIL 100UH	1	
L8001		VLQ0319K470	COIL 47UH	1	
L8002		VLQ0319F150	COIL 15UH	1	
L8003		VLQ0426J470	COIL 47UH	1	
L8004		VLQ0426J270	COIL 27UH	1	
L8005,06		VLQ0426J100	COIL 10UH	2	
L8007		VLQ0319F150	COIL 15UH	1	
L8011		VLQ0163J101	COIL 100UH	1	
P303		VJP3125D006	CONNECTOR (MALE) 6P	1	
P4003		VJP3125B008	CONNECTOR (MALE) 8P	1	
Q204		2SB1462	TRANSISTOR	1	
Q206		2SC4627	TRANSISTOR	1	
Q207		XP1401	TRANSISTOR-RESISTOR	1	
Q208		XP4601	TRANSISTOR-RESISTOR	1	
Q209-11		XP4654	TRANSISTOR-TRANSISTOR	3	
Q301		XP4501	TRANSISTOR-RESISTOR	1	
Q302		XP4601	TRANSISTOR-RESISTOR	1	
Q701		XN1401	TRANSISTOR-TRANSISTOR	1	
Q702		XP4401	TRANSISTOR-RESISTOR	1	
Q703		2SD874	TRANSISTOR	1	
Q704		2SD601A	TRANSISTOR	1	
Q705		2SD2216	TRANSISTOR	1	
Q706		XP1501	TRANSISTOR-RESISTOR	1	
Q707,08		XP4501	TRANSISTOR-RESISTOR	2	
Q709		2SD1030	TRANSISTOR	1	
Q1001		2SA1731	TRANSISTOR	1	
Q1002,03		2SB798	TRANSISTOR	2	
Q1004		2SD2210	TRANSISTOR	1	
Q1005		2SB1073	TRANSISTOR	1	
Q1062		2SB798	TRANSISTOR	1	
Q3001		XN4501	TRANSISTOR-RESISTOR	1	
Q3002		XN4401	TRANSISTOR-RESISTOR	1	
Q3005		2SB1462	TRANSISTOR	1	
Q3006		2SB970X	TRANSISTOR	1	
Q3011,12		2SC4627	TRANSISTOR	2	
Q3013		2SD2216	TRANSISTOR	1	
Q3020,21		2SB1462	TRANSISTOR	2	
Q3022		2SC4627	TRANSISTOR	1	
Q4001		2SD2216	TRANSISTOR	1	
Q4002		2SD602-R	TRANSISTOR	1	
Q4003		2SD2216	TRANSISTOR	1	
Q4005		2SB1219	TRANSISTOR	1	
Q4601		XP4501	TRANSISTOR-RESISTOR	1	
Q4603		XP4501	TRANSISTOR-RESISTOR	1	
Q5001,02		XN4504	TRANSISTOR-TRANSISTOR	2	
Q5004,05		2SA812	TRANSISTOR	2	
Q5006,07		XN1501	TRANSISTOR-TRANSISTOR	2	
Q6002		2SD2216	TRANSISTOR	1	
Q6004		2SD2216	TRANSISTOR	1	
Q6005		XP6501	TRANSISTOR-RESISTOR	1	
Q6006		2SB1462	TRANSISTOR	1	
Q6201		2SB1462	TRANSISTOR	1	
Q6300		2SB1462	TRANSISTOR	1	
Q6301		2SD2216	TRANSISTOR	1	
Q8002		2SB1462	TRANSISTOR	1	
Q8003		2SD2216	TRANSISTOR	1	
Q8004		2SB1462	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q8005		2SD2216	TRANSISTOR	1	
Q8006		2SC4627	TRANSISTOR	1	
QR301		UN9212	TRANSISTOR-RESISTOR	1	
QR701		UN9211	TRANSISTOR-RESISTOR	1	
QR1002		UN9214	TRANSISTOR-RESISTOR	1	
QR1006		UN2130X	TRANSISTOR-RESISTOR	1	
QR1061		UN9115	TRANSISTOR-RESISTOR	1	
QR3001		UN9212	TRANSISTOR-RESISTOR	1	
QR3003		UN9213	TRANSISTOR-RESISTOR	1	NV-R30B/A ONLY
QR3004		UN9212	TRANSISTOR-RESISTOR	1	NV-R30B/A ONLY
QR3005		UN9212	TRANSISTOR-RESISTOR	1	
QR4601		XP1213	TRANSISTOR-RESISTOR	1	
QR4602		UN9213	TRANSISTOR-RESISTOR	1	
QR5001,02		XP1213	TRANSISTOR-RESISTOR	2	
QR5003		UN2130X	TRANSISTOR-RESISTOR	1	
QR5005		UN9213	TRANSISTOR-RESISTOR	1	
QR5010		UN2130X	TRANSISTOR-RESISTOR	1	
QR5011		UN9211	TRANSISTOR-RESISTOR	1	
QR6001		UN2130X	TRANSISTOR-RESISTOR	1	
QR6002		XP1213	TRANSISTOR-RESISTOR	1	
QR6003		UN9112	TRANSISTOR-RESISTOR	1	
QR6004		XP4115	TRANSISTOR-RESISTOR	1	
QR6005		UN9213	TRANSISTOR-RESISTOR	1	
QR6007		UN9211	TRANSISTOR-RESISTOR	1	
QR6008		UN9210	TRANSISTOR-RESISTOR	1	
QR6010		XP1213	TRANSISTOR-RESISTOR	1	
QR6012		XP1213	TRANSISTOR-RESISTOR	1	
QR6014		UN9213	TRANSISTOR-RESISTOR	1	
QR6015		UN9215	TRANSISTOR-RESISTOR	1	
QR6016		XP1213	TRANSISTOR-RESISTOR	1	
QR6018		UN921E	TRANSISTOR-RESISTOR	1	
QR8001		UN9213	TRANSISTOR-RESISTOR	1	
R201		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R202		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R203		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R205		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R206		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R207		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R212		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R214-17		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	4	
R218		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R223,24		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R225		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R233		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R236		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R237		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R238		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R239		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R241,42		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R243		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R244		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R245		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R246		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R247		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R249		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R250		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R251		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R252		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R253		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R255		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R256		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R257		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R258		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R259		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R260		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R263		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R264		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R265		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R266		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R267		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R268		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R269		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R270		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R271		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R272,73		ERJ3GEYJ820	M.RESISTOR CH 1/16W 82	2	
R274		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R275		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R282		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R284		ERJ3GEYJ820	M.RESISTOR CH 1/16W 82	1	
R285		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R286		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R287-89		ERJ3GEYJ820	M.RESISTOR CH 1/16W 82	3	
R290		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R291		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R292,93		ERJ3GEYJ820	M.RESISTOR CH 1/16W 82	2	
R294		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R295		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R296		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R297		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R298		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R299		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R301		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R302,03		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R304,05		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R307		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R310		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R311		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R312,13		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	2	
R314		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R315		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R316		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R317		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R318,19		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R320		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R321		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R322		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R323		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R326-28		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R329-31		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	3	
R332		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R333		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R334,35		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R336		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R337-40		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	4	
R342		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R343-45		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R348-54		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	7	
R355-58		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
R359		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R360		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R361		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R364		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R370		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R371		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R374		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R375-83		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	9	
R385		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R387		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R388		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R389		ERJ3GEYJ4R7	M.RESISTOR CH 1/16W 4.7	1	
R391		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R392		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R701		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R702,03		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R704		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R705		VRE0071E333	M.RESISTOR	1	
R708		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R709		VRE0071E333	M.RESISTOR	1	
R710		VRE0071E223	M.RESISTOR	1	
R711		VRE0071E102	M.RESISTOR	1	
R712		VRE0071E152	M.RESISTOR	1	
R713		VRE0071E561	M.RESISTOR	1	
R714		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R715,16		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R717		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R718		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R719		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R720,21		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R722		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R723		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R724		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R725		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R726		ERJ3GEYG202	M.RESISTOR CH 1/16W 2K	1	
R727		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R728		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R729		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R730		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R731,32		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R733		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R734,35		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	2	
R736		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R737		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R738		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R739		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R740		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R741		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R742		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R743		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R744		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R745		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R746		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R747,48		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R749		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R750		ERJ3GEYG303	M.RESISTOR CH 1/16W 30K	1	
R751		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R752		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R753		VRE0071E103	M.RESISTOR	1	
R754		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R755		VRE0071E103	M.RESISTOR	1	
R756		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R757		ERJ3GEYG113	M.RESISTOR CH 1/16W 11K	1	
R758		ERJ3GEYG393	M.RESISTOR CH 1/16W 39K	1	
R759		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R760		ERJ3GEYJ3R3	M.RESISTOR CH 1/16W 3.3	1	
R761		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R764		ERJ3GEYJ3R3	M.RESISTOR CH 1/16W 3.3	1	
R765		ERJ3GEYJ125	M.RESISTOR CH 1/16W 1.2K	1	
R767		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R1001		VRE0067G822	M.RESISTOR	1	
R1002		VRE0067G272	M.RESISTOR	1	
R1003		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1004		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R1005		VRE0067G562	M.RESISTOR	1	
R1006		VRE0067G272	M.RESISTOR	1	
R1007		ERJ8GEYJ330	M.RESISTOR CH 1/8W 33	1	
R1008		VRE0067G103	M.RESISTOR	1	
R1009		VRE0067G152	M.RESISTOR	1	
R1010		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1012		VRE0067G20CT	M.RESISTOR	1	
R1013		VRE0067G393	M.RESISTOR	1	
R1014,15		VRE0067G182	M.RESISTOR	2	
R1016		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R1017		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1018		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1019		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1020		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1021		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R1022		ERJ3GEYJ150	M.RESISTOR CH 1/16W 15	1	
R1023		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R1024		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1025		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1026		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1027		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1033		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1035		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1038		VRE0034E750	M.RESISTOR CH 1/10W 75	1	
R1039		VRE0034E55A	M.RESISTOR CH 1/10W	1	
R1040		VRE0034E151	M.RESISTOR CH 1/10W 150	1	
R1051		VRE0071E273	M.RESISTOR	1	
R1052		VRE0071E473	M.RESISTOR	1	
R1062		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1063		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1065		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R1071		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1072		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R1073		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R1080		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R1090		ERJ8GEYJ561	M.RESISTOR CH 1/8W 560	1	
R3001		ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	1	
R3002		ERJ3GEYJ225	M.RESISTOR CH 1/16W 2.2M	1	
R3003,04		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R3005		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R3007		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	NV-R30B/A ONLY
R3008		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	NV-R30E ONLY
R3008		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	NV-R30B/A ONLY
R3009		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3010		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R3015,16		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	2	
R3017		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R3018		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R3019		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R3021,22		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R3023,24		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	2	
R3025,26		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R3027		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3028		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3029		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R3032		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3035		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3036		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R3037		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R3038		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3040		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R3050		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R3051		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3057		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3058		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3059		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R3060		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R3062		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3063,64		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	2	
R3071,72		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R3073		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3074		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3081		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3082		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R3086		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3090,91		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R4001		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R4017		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4018		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4019,20		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R4021		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4022		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4023		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4024		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R4533		VRE0034E133	M.RESISTOR CH 1/10W 13K	1	
R4601		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R4602		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4603,04		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R4605-07		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	3	
R4608		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R4609		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4610		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4611		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R4612		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R4613		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4620		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R4622		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4623		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4626		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4627		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4628		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4629		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R5001		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R5002		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R5003		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R5005		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R5006-08		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	3	
R5009		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	NV-R30E ONLY
R5010		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	NV-R30B/A ONLY
R5011		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R5013		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R5014		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R5015,16		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	2	
R5024		ERJ6GEYJ4R7	M.RESISTOR CH 1/10W 4.7	1	
R5025		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R5026		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R5027		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R5028		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R5029,30		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	2	
R5033		ERJ3GEYJ155	M.RESISTOR CH 1/16W 1.5M	1	
R5055,56		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R5070		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R5071		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R5100		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R6002		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R6003		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R6004		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R6011		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6012		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6013		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6014		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R6015		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6016		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R6017		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6018		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6019		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6020		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6021		ERJ8GEYJ120	M.RESISTOR CH 1/8W 12	1	
R6022		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6024		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6025		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6026		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6027,28		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	2	
R6029		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R6030		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6031		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6032,33		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R6034		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6035		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6039		ERJ8GEYJ2R2	M.RESISTOR CH 1/8W 2.2	1	
R6040		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6041		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R6042		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R6043		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6044		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R6045		VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R6048,49		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R6050		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6051		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R6052,53		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	2	
R6054		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6055,56		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R6059		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6060		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6061		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R6063		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6066		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6070		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6071		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6073		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6074		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6075		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6076		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R6078		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6080		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6090,91		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	2	
R6101		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R6102,03		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R6104,05		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6108		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6111		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R6112		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R6113		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6120,21		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
R6130		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R6131		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6134		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6135		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R6136		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6137		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6138		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6139		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6140		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6142		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6143		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6144		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6145		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6150		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R6151		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R6152		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R6153		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R6154		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6155		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6156		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R6157		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6159		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R6160		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6161		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6162		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6168		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6170		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6171		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6172-74		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R6175		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6199		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6203		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6205		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6206,07		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R6208		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6209		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R6210,11		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R6212		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6213		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6214		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6215		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6216		ERJ8GEYJ2R2	M.RESISTOR CH 1/8W 2.2	1	
R6230		ERJ3GEYJ155	M.RESISTOR CH 1/16W 1.5M	1	
R6231		ERJ8GEYJ2R2	M.RESISTOR CH 1/8W 2.2	1	
R6300		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R6301		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R6302		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R6303		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R6304		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6305		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R6309		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6310		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6311		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6312		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8001,02		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R8003		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R8004		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R8005		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8007		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R8010		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R8011		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R8012		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8013		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R8014,15		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R8016		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R8017		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R8018		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R8020,21		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R8026		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8027		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R8028		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R8029		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R8030,31		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R8032		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R8033		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R8034		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R8037		VRE0071E271	M.RESISTOR	1	
R8040		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8041		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R8043,44		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R8046,47		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R8048		VRE0071E271	M.RESISTOR	1	
R8049		VRE0071E153	M.RESISTOR	1	
R8050,51		ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	2	
R8052,53		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	2	
R8054		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R8056		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
RA301-04		EXBV8V102J	RESISTOR-RESISTOR	4	
RA6001		EXBV4V104J	RESISTOR-RESISTOR	1	
RA6003		EXBV4V102J	RESISTOR-RESISTOR	1	
RA6004,05		EXBV8V102J	RESISTOR-RESISTOR	2	
RA6006		EXBV4V102J	RESISTOR-RESISTOR	1	
RA6007		EXBV8V102J	RESISTOR-RESISTOR	1	
RA6008-12		EXBV4V104J	RESISTOR-RESISTOR	5	
RA6013		EXBV4V102J	RESISTOR-RESISTOR	1	
T1001		ELL04T047R	TRANSFORMER	1	
T1002		VTP0357	TRANSFORMER	1	
T4001		EIQ6QB008T	TRANSFORMER	1	
TH701		VRE0083	THERMISTOR	1	
VR3001		EVM7JSX10B23	V.RESISTOR	1	
VR3003		EVM7JSX10B52	V.RESISTOR	1	
VR4502,03		EVM7JSX10B54	V.RESISTOR	2	
VR5003		EVM7JSX10B54	V.RESISTOR	1	
X201		VSX0564	CRYSTAL OSCILLATOR	1	
X301		EFOS1605E5	CRYSTAL OSCILLATOR	1	
X6001		VSX0461	CRYSTAL OSCILLATOR	1	
X6002		VSX0601	CRYSTAL OSCILLATOR	1	
X8001		VSX0563	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC4031	H.A SHIELD COVER (BOTT.)	1	
		VSC4032	H.A SHIELD COVER (TOP)	1	
		VSC4028	CAMERA SHIELD COVER (TOP)	1	
		VSC4029	CAMERA SHIELD COVER (BOTT.)	1	
		VSC3855	POWER SHIELD COVER (TOP)	1	
		VSC3906	POWER SHIELD COVER (BOTT.)	1	
	■	VEP04452B	Hi-Fi AUDIO PACK C.B.A.		(RTL)
	■	(VEP04452A)	(Hi-Fi AUDIO PACK C.B.A.)		VEP04452B
					NV-R30 ONLY
					VEP04452A
					NV-R30/A ONLY
C4001		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4002		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C4003		ECUX1H222KBV	E.CAPACITOR 50V 2200P	1	NV-R30/A ONLY
C4004		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C4005		ECEV1EA4R7	E.CAPACITOR 25V 4.7U	1	
C4006		ECST1EY474Z	T.CAPACITOR 25V 0.47U	1	
C4007		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C4008		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C4010		ECUX1C123KBV	E.CAPACITOR 16V 0.012U	1	NV-R30/A ONLY

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4020		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C4021		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4022		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C4501		ECEV1HA2R2	E.CAPACITOR 50V 2.2U	1	
C4502,03		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C4504,05		ECUM1C473KBV	C.CAPACITOR CH 16V 0.047U	2	
C4506,07		ECEV0GA330	E.CAPACITOR 4V 33U	2	
C4508,09		ECUM1C105MBM	C.CAPACITOR CH 16V 1U	2	
C4510,11		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C4512,13		ECEV0GA101	E.CAPACITOR 4V 100U	2	
C4514-19		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	6	
C4522		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4523		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C4524,25		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C4526		ECEV05A470	E.CAPACITOR 4V 47U	1	
C4527		ECUM1C224KBN	C.CAPACITOR CH 16V 0.22U	1	
C4528		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C4529		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C4532,33		ECST1CY335Z	T.CAPACITOR 16V 3.3U	2	
C4534		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4535		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C4536		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4540		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4541,42		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	2	
D4501		MA143	DIODE	1	
FP4003		VJS3319D021	CONNECTOR (FEMALE) 21P	1	
IC4501		JCY0040	IC	1	
L4002		VLQ0423J153	COIL 15MH	1	
L4003		ELJPA221KB	COIL	1	
L4501		ELJPA330KB	COIL	1	
P4001		VJP3172B004	CONNECTOR (MALE)	1	
Q4004		XN4501	TRANSISTOR-RESISTOR	1	
Q4007		2SB1219A	TRANSISTOR	1	
Q4501,02		2SD1979	TRANSISTOR	2	
QR4001		UN5212	TRANSISTOR-RESISTOR	1	
QR4003		UN5112	TRANSISTOR-RESISTOR	1	
QR4004		UN5210	TRANSISTOR-RESISTOR	1	
QR4005		UN5213	TRANSISTOR-RESISTOR	1	NV-R30B/A ONLY
QR4501		UN5113	TRANSISTOR-RESISTOR	1	
R4002		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4003		VRE0071E271	M.RESISTOR	1	
R4004		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4005		VRE0071E682	M.RESISTOR	1	
R4006		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R4007		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R4009		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4010		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4012		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	NV-R30B/A ONLY
R4015,16		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R4025		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4026		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4027		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4028		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R4501		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R4502,03		ERJ3GEYJ511	M.RESISTOR CH 1/16W 510	2	
R4504,05		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R4506		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R4510,11		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R4512,13		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4516		VRE0071E153	M.RESISTOR	1	
R4517		VRE0071E123	M.RESISTOR	1	
R4520		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R4523		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4524		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R4525		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R4526,27		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	2	
R4528,29		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	2	
R4530,31		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	2	
R4533		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R4534		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R4535		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4536,37		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	2	
	■	VEP02418A	DRIVE C.B.A.		(RTL)
C2001		ECUM1C564KBM	C.CAPACITOR CH 16V 0.56U	1	
C2002		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	1	
C2003		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C2004		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C2005		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C2007		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	1	
C2009		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C2011		ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C2012		ECUM1C473KXV	C.CAPACITOR CH 16V 0.047U	1	
C2014		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C2015-17		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	3	
C2018		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2020-22		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C2023		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2024		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2025-27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C2028		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2029-32		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	4	
C2033		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C2036		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2040-42		ECUM1C473KXV	C.CAPACITOR CH 16V 0.047U	3	
FP2001		VJS2848D007	CONNECTOR (FEMALE) 7P	1	
FP2002		VJS2958B018	CONNECTOR (FEMALE) 18P	1	
FP2003		VJS3552D023	CONNECTOR (FEMALE) 23P	1	
IC2001		TB6513AF	IC	1	
IC2002,03		UN224	IC	2	
QR2001		ON2170	TRANSISTOR-RESISTOR	1	
QR2002		UN5215	TRANSISTOR-RESISTOR	1	
R2001		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2002		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R2003		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2004		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2005		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R2006		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R2007		ERJ8GEYJR47	M.RESISTOR CH 1/8W 0.47U	1	
R2008		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	
R2009		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R2010		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2011		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R2012		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R2014		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2015		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2016		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2017		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2018		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R2019,20		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R2021		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2022		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2040-42		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	3	
R2045,46		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
			MISCELLANEOUS		
		VMD1842	REEL SENSOR STATOR	1	
	■	VEP28087A	E.V.F. C.B.A.		(RTL)
B1601		VJP3126B030	CONNECTOR (MALE)	1	
C801		ECQB1C104JB	P.CAPACITOR CH 16V 0.1U	1	
C802-04		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	3	
C805		ECEA0JKE221	E.CAPACITOR 6.3V 220U	1	
C806		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C807		ECUM1C105KBM	C.CAPACITOR CH 16V 1U	1	
C809		ECEV1CA470F	E.CAPACITOR 16V 47U	1	
C810		ECUM2A332JUM	C.CAPACITOR 100V 3300P	1	
C811		ECST1AD476Z	T.CAPACITOR 10V 47U	1	
C812		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C813		ECUM2J221KBM	C.CAPACITOR 630V 220P	1	
C814		ECEV1HA010	E.CAPACITOR 50V 1U	1	
C815		ECUM2H331KBM	C.CAPACITOR 500V 330P	1	
C816		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C831		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C1603		ECEV1CA220	E.CAPACITOR CH 10V 22U	1	
C1701		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1702		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
D803		MA142WA	DIODE	1	
D1601		SFPB-64	DIODE	1	
D1602,03		MA8130M	DIODE	2	
D1701		MA141WA	DIODE	1	
IC801		AN2516S	IC	1	
J1601		VJJ0368	JACK	1	
J1602		VEK6424	JACK	1	
L801		ELJPA220KB	COIL	1	
L802		ELH8LE204R	COIL	1	
L804		ELJFA680KB	COIL 68UH	1	
L805		ELJPA100KB	COIL	1	
L1601,02		VLP0134	COIL	2	
P801		VJP3499D004	CONNECTOR (MALE) 4P	1	
P803		VJP3125D003	CONNECTOR (MALE) 3P	1	
P804		VJP1242T	CONNECTOR (MALE) 2P	1	
P1601		VJP3125D004	CONNECTOR (MALE) 4P	1	
P1602		VJP3125D002	CONNECTOR (MALE) 2P	1	
Q802		2SD968A-S	TRANSISTOR	1	
Q803,04		2SA1748	TRANSISTOR	2	
Q1701		2SB798	TRANSISTOR	1	
Q1702		XP1501	TRANSISTOR-RESISTOR	1	
Q1703		2SB970X	TRANSISTOR	1	
Q1704		2SB798	TRANSISTOR	1	
QR881		UN9212	TRANSISTOR-RESISTOR	1	
QR882		UN2130X	TRANSISTOR-RESISTOR	1	
QR1701		XP1212	TRANSISTOR-TRANSISTOR	1	
R801		ERJ6ENF4422	M.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R802		ERJ6GEYJ3R9	M.RESISTOR CH 1/10W 3.9	1	
R805		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R808		VRE0071E242	M.RESISTOR	1	
R809		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R810		ERJ6GEYF104	M.RESISTOR CH 1/10W 100K	1	
R815		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R816,17		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R818		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R819,20		ERJ6GEYJ275	M.RESISTOR CH 1/10W 2.7M	2	
R821		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R823		ERJ3GEYJ8R2	M.RESISTOR CH 1/16W 8.2	1	
R829		ERJ6ENF4222	RESISTOR	1	
R833		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R834		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R835		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R840		ERJ8GEYJ685	M.RESISTOR CH 1/8W 6.8M	1	
R841,42		ERJ6GEYJ475	M.RESISTOR CH 1/10W 4.7M	2	
R843		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R844		ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	1	
R850		ERJ6ENF8201	.RESISTOR W	1	
R851		ERJ6ENF3901	.RESISTOR W	1	
R852		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R853		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R854		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R855		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R883		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R890		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R899		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R1601		VSF0092	RESISTOR	1	
R1606		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1702		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1703		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R1704		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R1705		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R1706		VRE0071E272	M.RESISTOR	1	
R1707		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R1708		VRE0071E221	M.RESISTOR	1	
R1709		VRE0067G562	M.RESISTOR	1	
R1710		VRE0067G681	.RESISTOR W	1	
R1711		VRE0067G562	M.RESISTOR	1	
SW892		ESD165236	SWITCH	1	
SW895		ESE122	SWITCH	1	
SW896		VSS0392	SWITCH	1	
T801		ETF08L28A	TRANSFORMER	1	
VR801		EVM7JSX30BE2	V.RESISTOR	1	
VR803		EVM7TSX00BV6	V.RESISTOR	1	
VR804		EVM7BSX30B26	V.RESISTOR	1	
Z1601		VSB0166	BATTERY	1	
			MISCELLANEOUS		
		VEE8773	CABLE	1	
	■	VEP22132B	CCD FLEX.CARD C.B.A.		(RTL)
B291		VJS3500C012	CONNECTOR (FEMALE) 12P	1	
C292		ECST1VX225Z	T.CAPACITOR 35V 2.2U	1	
C293,C294		ECUM1E473ZFN	C.CAPACITOR 25V 0.047U	2	
C295		ECUM1E104ZFN	C.CAPACITOR 25V 0.1U	1	
D291		MA153	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q291		2SC2295	TRANSISTOR	1	
R291		ERJ6GEYG560	M.RESISTOR CH 1/16W 56	1	
R292		ERJ6GEYF472	M.RESISTOR CH 1/16W 4.7K	1	
W291		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
			MISCELLANEOUS		
		VJB22132	FLEX. CARD	1	
	■	VEK6690	LENS FLEX. CARD C.B.A.		(RTL)
			MISCELLANEOUS		
		ON1004-R	PHOTO SENSOR	1	
	■	VEK6715	MIC UNIT		(RTL)
C4301-03		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C4304		ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	1	
C4305		ECUX1C273KBV	C.CAPACITOR CH 16V 0.27U	1	
C4306		ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	1	
C4307		ECUX1C273KBV	C.CAPACITOR CH 16V 0.27U	1	
C4309		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4310,11		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	2	
C4312		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4313,14		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	2	
C4315		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4316,17		ECST1CY105Z	T.CAPACITOR 16V 1U	2	
C4318,19		ECEV05A470	E.CAPACITOR 4V 47U	2	
C4320		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4321,22		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C4325,26		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C4327,28		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	2	
IC4301		BA14741F	IC	1	
J4301		VJJ0319	JACK	1	
P4301		VJP3172B004	CONNECTOR (MALE)	1	
Q4301,02		2SD1819A	TRANSISTOR	2	
Q4303		2SC3929	TRANSISTOR	1	
Q4304		2SB1218A	TRANSISTOR	1	
Q4305		2SC3929	TRANSISTOR	1	
Q4306		2SB1218A	TRANSISTOR	1	
R4301-03		VRE0071E222	M.RESISTOR	3	
R4304		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R4305		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4306		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4307		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4308		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4309		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R4310,11		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	2	
R4312-15		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	4	
R4316		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4317		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4318,19		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R4320		VRE0071E154	M.RESISTOR	1	
R4321		VRE0071E563	M.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4322		VRE0071E103	M.RESISTOR	1	
R4323		VRE0071E102	M.RESISTOR	1	
R4324		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4325		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R4326		VRE0071E154	M.RESISTOR	1	
R4327		VRE0071E563	M.RESISTOR	1	
R4328		VRE0071E103	M.RESISTOR	1	
R4329		VRE0071E102	M.RESISTOR	1	
R4330		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4331		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R4332		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4333,34		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
			MISCELLANEOUS		
		VEE8841	CABLE	1	
	■	VEP00T97B	FRONT OPERATION C.B.A.		(RTL)
D501		PH310-1	DIODE	1	
P501		VJP3130B008	CONNECTOR (MALE) 8P	1	
SW501,02		EVQ6QF02K	SWITCH	2	
VR501		EVJ4Y0FB4B15	V.RESISTOR W	1	
			MISCELLANEOUS		
		VEE8842	CABLE	1	
	■	VEP00U31A	AV JACK C.B.A.		(RTL)
B1501		VJS3294C010	CONNECTOR (FEMALE) 10P	1	
C1501		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1502		ECUM1H561JCN	C.CAPACITOR CH 50V 560P	1	
D1501		MA143	DIODE	1	
L1503-06		VLQ0584	COIL	4	
			MISCELLANEOUS		
		VEJ1443	JACK PLATE	1	
	■	VEP00T11C	S/S C.B.A.		(RTL)
PJ6701		VJP3007E003	CONNECTOR (MALE)	1	
S6702		ESE105MH7	SWITCH	1	
	■	VEK6711	EDIT 5P JACK C.B.A.		(RTL)
			MISCELLANEOUS		
		VEE8840	CABLE	1	

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P.C.B.	FILM CODE
AV JACK	HOKU00-00U31
CAMERA MAIN	HOKU00-23202
AUDIO MAIN	HOKU00-04452
MIC	HOKU00-04451
DRIVE	HOKU00-02418
EVF	HOKU00-28087
FRONT OPERATION	HOKU00-00T97
CCD FLEXIBLE CARD	HOKU00-22132
S/S	HOKU00-00T11
EDIT 5P JACK	HOKU02-00U32